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SEPT. 13 - OCT. 11

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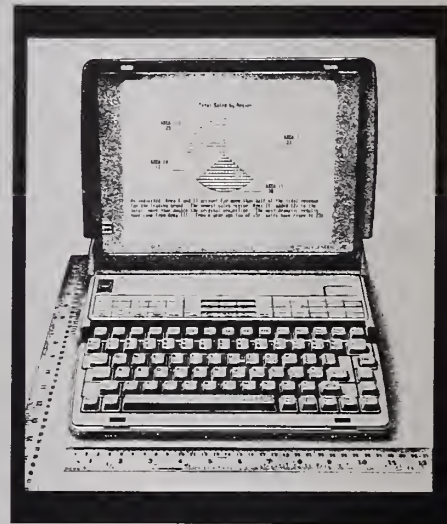
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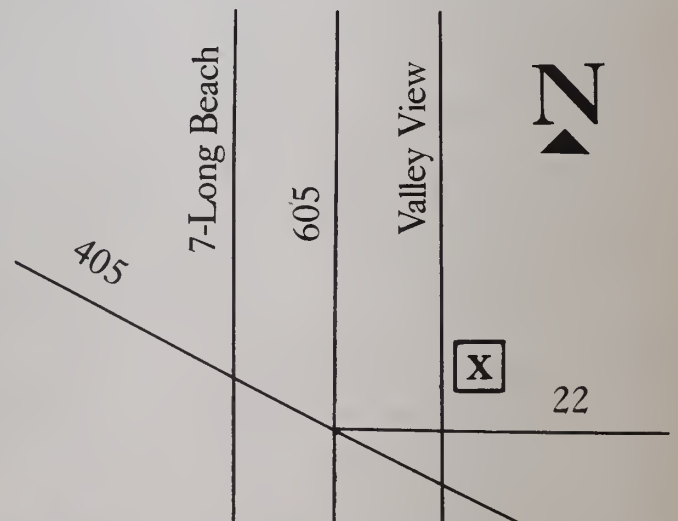


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COVER AND CONTENTS PHOTO: PAT JOHNSON STUDIOS



Brøderbund's Doug and Gary Carlston, practicing their own version of the domino theory

COVER STORY

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Next Stop World Domination?

By Mary Eisenhart

Solidly entrenched in the US, making steady gains in the global market, Brøderbund Software's founders explain their formula for success: they publish what they like.

COLUMNS

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Telecommunications

By Brock N. Meeks

A bill pending in the U.S. Senate is a threat to electronic privacy.

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Small Business And Computers

By L.K. Engelhart

L.K. Engelhart propounds the heretical notion that the business computer market isn't saturated, just confused.

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Macintosh

By Borboro Leone

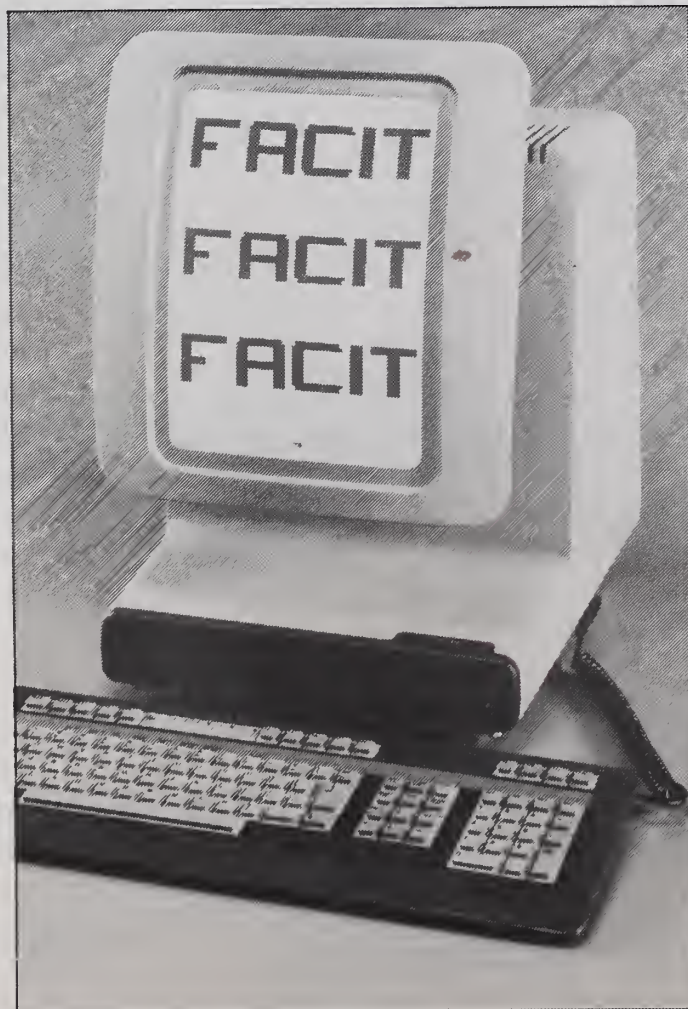
There's no such thing as the "best" spreadsheet. Barbara Leone stresses the importance of buying the right product for your needs.

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Commodore

By Matthew Leeds

A look at some new products, including the amazing Amiga Eye.



The Facit Twist, with its rotating screen, is a revolutionary development in ergonomics and ease of use. See Buyers Guide

FEATURES

28 Court Reporting In The Computer Age

By James Evans

Technology has produced a fast, efficient alternative to traditional, slow transcription of court records.



32 Dance On Microcomputers

By Tom Ulrich

A Manhattan Beach man has come up with a way to preserve dance heritage: on microcomputers.

44 You Can Build Your Own PC-XT

By Aubrey Pilgrim

The author, who describes himself as "a complete klutz," tells how he built his own XT compatible from components, got a powerful computer configured the way he wanted it, and saved \$3000 in the process.

Photo: Ben Janken



Ken Combs, a court reporter in San Francisco, demonstrates the CAT computerized transcription system for court records on page 28

Photo: Dave Lepori



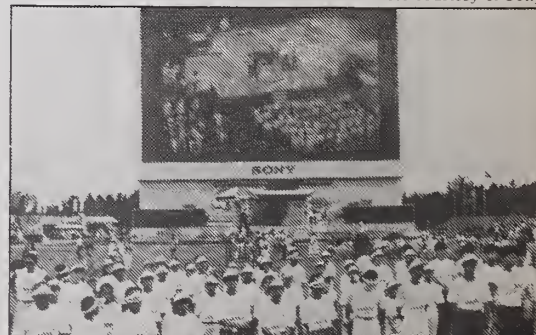
Hobbyist Aubrey Pilgrim with his home-made PC-XT compatible

DEPARTMENTS

8 Edit Mode

Don Hamilton comments on the eroding influence of Data Processing departments in business computing.

Photo courtesy of Sony



Brøderbund's Japanese division sponsored a Lode Runner competition, played by 50 young finalists on an 80' x 150' screen. It was the largest video game ever played. See Newsreels

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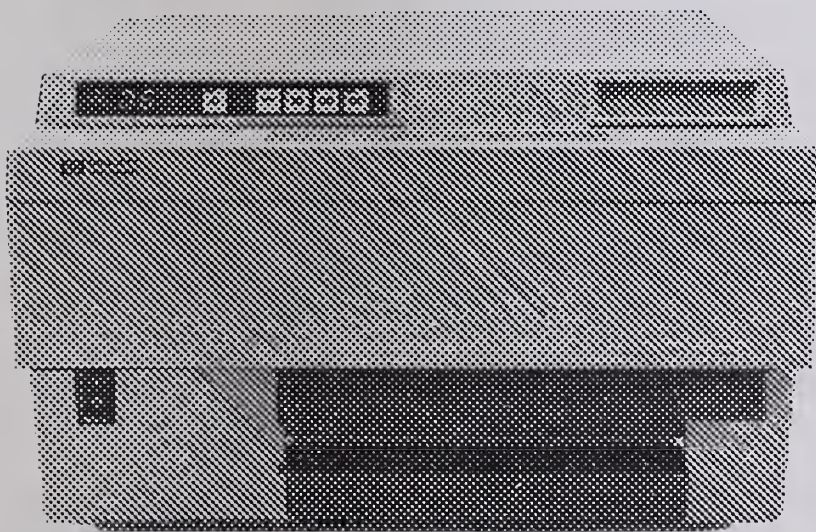
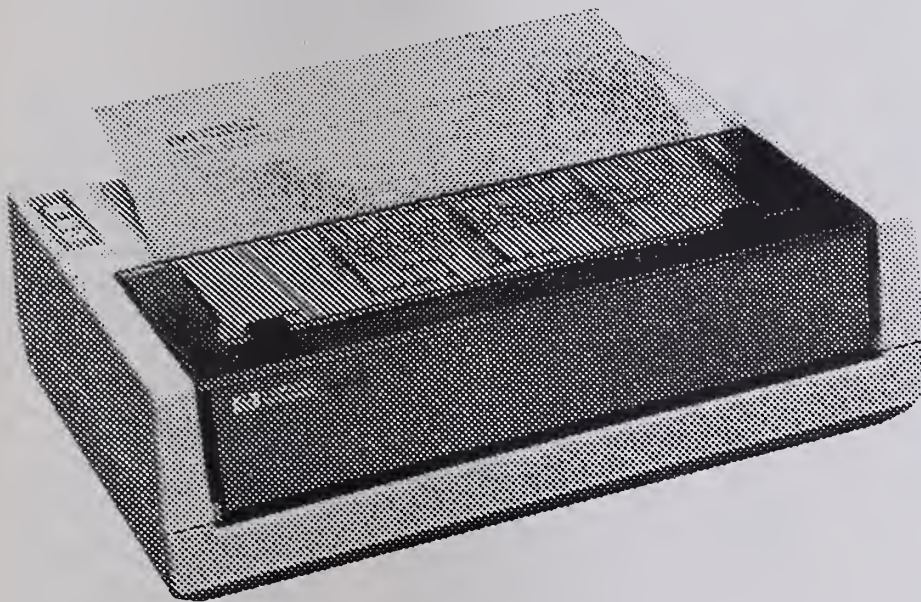
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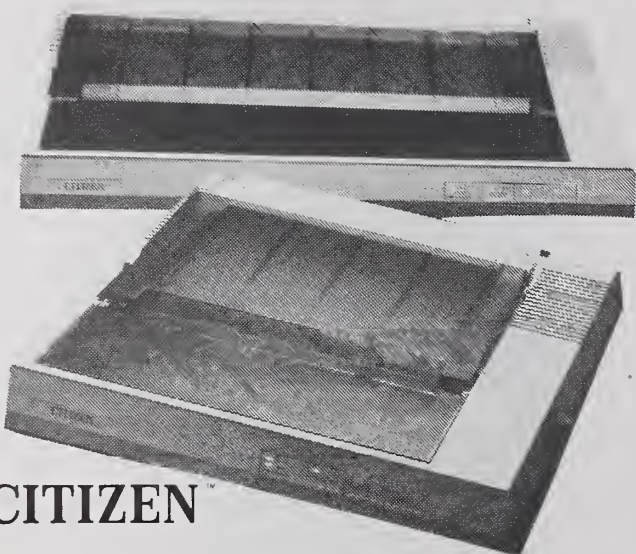
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EDIT MODE

Industrial Reorganization And The Decline Of "DP"

By Don Hamilton

The standard company organization has a data processing tree, an organization formed in response to the introduction of the mainframe computer into industry. The DP organization met the needs of the '60s and '70s and continues to provide the support needed for the use of large computer systems.

The '80s have seen the beginning of a big change. Computers are getting smaller and more people are able to run them without the full-time help of computer specialists.

The DP group wants standardization so that they can support the complete needs of users, as they have done traditionally. Each of the individual organizations wants its particular needs addressed. What that means is that the standard does not often meet all of the individual's needs. No DP department is large enough to have complete knowledge of all systems.

Most companies are experimenting with ad hoc organizations and study groups designed to shoehorn everyone into the standard or to expand the standard to include all the needs. The end result can be imagined: confusion, confrontation and no meaningful solutions.

The managers find ways to meet their needs; the committees, working groups, and study groups continue to argue. Slowly but surely the computers are arriving even in the most sloth-like organizations. Because of the immediate needs that are not being met while the decision process continues, the new computers have very little to do with standardization.

Eventually each company comes or will come to the same conclusion: the structure of the DP department must change. The new DP departments, like the new computers, will be small and spread throughout the company, each one different to meet each unit's needs.

It is likely the system the user purchased is not one that was blessed as part of the standard. Due to the non-standard nature of the equipment, the DP person probably is not as familiar as would be required to solve the problem immediately without some study. He or she may also imagine that this person is not smart enough to be operating a computer, and that therefore this is the perfect opportunity to rub a face in the "need for standardization" argument. The pat answer to a call for help is, "Well, I don't know, but we will study the problem. If you had standard software and hardware we could help."

It's true that no one can know or be vaguely familiar with all the hardware and software that might be purchased within a large company. That is precisely why each organization must have its own small unit that understands what the computer needs are for the entire organization, but are also familiar with the individual needs and job requirements of the people within that organization.

The "DP" department is not going to disappear. It will still service the large mainframe computers, host those that connect to the mainframe, and maintain some of the larger networking systems. However, the likely scenario is a set of smaller "communication service" departments that will be added to each organization almost regardless of its size. These units in total throughout the company will be larger than the "DP" department.

These units are being formed right now (without official sanction) in most larger companies to meet current needs. They are quite often attached ad hoc to almost any manager who is in need with no real title except "staff" or just "the computer person." It won't be long before they will have a box of their own on the organization chart. □

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Rising Star Expands Its Horizons

In an exclusive interview with Gordon Mastain, Executive Director of Marketing and Sales for RSI, MicroTimes learned of a new marketing plan that may help Rising Star rise even higher. Like their software, RSI's new marketing plan is innovative and definitely "user friendly."

Until recently Rising Star has been partially eclipsed by a contractual arrangement with Epson America, under which Epson had sole marketing rights to RSI's principal product, VALDOCS, a unique, integrated software program conceived by RSI's founder, Chris Rutkowski. That contract has now expired, and RSI plans to take over the marketing of all releases of VALDOCS beyond the VALDOCS 2 version recently released by Epson for both the QX-10 and QX-16 desk top computers.

To further expand their sales base, RSI will be releasing versions of their software customized to run on the new Atari 520ST. The first Atari-compatible package will contain versions of *Valdraw* and *Valpaint*, RSI's powerhouse color graphics programs. These will be followed by selected modules of VALDOCS integrated software. Modules such as Edit, Draw, Mail, Spreadsheet, etc. will ultimately link to give the Atari 520ST a fully integrated software system.

RSI's major sales effort will be direct to users via mail and telephone orders. A few carefully selected retail stores will offer over-the-counter sales.

Much of the new marketing plan involves an innovation called "The Software Buying Simplified Plan." Under this plan, programs of common interest such as *Valdraw* and *Valpaint* (with or without a mouse) will be bundled together and priced well below the sum of the prices of the individual components. In most package sales the buyer will be given credit for any of the component programs he has previously purchased. Best of all, the sale price includes all future upgrades for the included programs.

The next edition in the VALDOCS series, VALDOCS+, will be sold under this plan with no additional charge for any future updates. This version will supersede the VALDOCS 2 version released by Epson in June of this year. VALDOCS 2 was a powerhouse of integrated software, but it was infested with bugs. During the past three months Chris Rutkowski and his programmers have literally been staying up nights to exterminate these bugs. With VALDOCS+ comes their promise that if

they can't develop a "fix" for any repeatable, significant bug within 60 days, you can ask for your money back. In addition, VALDOCS+ will have an improved editor module that will let you work on several documents simultaneously. There will also be numerous additional features and improvements. Users who have purchased VALDOCS 2 from Epson will be credited the full purchase price towards VALDOCS+. That's what RSI means by "user friendly" marketing!

— John McMullin

Worldwide IBM Network

In mid-July, the IBM Users' Group announced that it had formalized an agreement with ITT Dialcom, Inc. to provide a worldwide electronic mail and publishing network. The announcement signaled a major leap in the power and scope of electronic communications — on a private as well as corporate level.

According to IBM Users' Group President Neil Zachary, the new network will contain elements of traditional electronic bulletin boards as well as of large information systems such as The Source or Compuserve — and then some. In addition to being able to service users from overseas, the network will have the potential of providing conference telecommuting; with the system's capability of handling 1400 callers simultaneously, some unprecedented link-ups appear possible.

The Dialcom service is broken down into three basic elements — electronic mail, information systems (such as AP/UPI/Dow Jones wires, OPEX News Agency, Official Airline Guide, International Medical Tribune Syndicate, etc.), and SIGS (including a number of technically oriented sub-boards designed to connect users directly with manufacturers regarding problems).

At an IBM Users' Group meeting in Los Angeles in mid-August, Zachary admitted that the choice of the Dialcom network — the result of a year-long search — was made with the corporate user in mind, and not the home hobbyist. Special SIGS relating to corporate concerns (such as pollution or new legislation) are being planned and Zachary even suggested the possibility of private business sub-boards.

With basic rates that run from \$20 during prime time to \$12 after office hours (3 p.m. on the West Coast), it seems that the Dialcom service will indeed find most of its callers among business users. Fortunately there is no monthly minimum.

For further information, call (800) 435-7342.

— Jeff Spurrier

PHOTOS COURTESY OF SONY



World's Largest Video Game

Lode Runner has already sold over a million copies in Japan, so it seemed only logical for Brøderbund's Japanese division and Sony (which made the world's largest video screen, with a display area of 80' x 150') to join forces in the Jumbotron TV competition. Fifty young finalists were selected from 3700 applicants all over Japan for their *Lode Runner* prowess and brought to Tokyo for the event, in which each contestant tried to rack up the highest possible number of points in three minutes. All contestants were presented with *Lode Runner* sweatsuits and t-shirts by Brøderbund, and Doug Smith, the game's programmer, flew to Tokyo to present the awards. The winners: first place went to Yasutaka Fujii, age 12; second to Kaoru Haeno, 12; third to Yuki Sakamoto, age 11.



SIGGRAPH '85 In San Francisco

SIGGRAPH is the Association for Computing Machinery's "Special Interest Group on Computer Graphics." It has an active membership of over 11,000, including engineers,

architects, artists, animators, filmmakers, hardware and software developers, scientists, mathematicians, and computer graphics professionals. Every year all these individuals get together to talk, share ideas, and show off what they have been doing over the past year. This year we were lucky to have the event take place at

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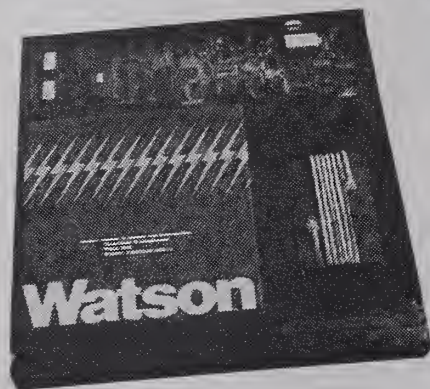
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New Printers From Epson

Moscone Center in San Francisco.

A lot happens during a SIGGRAPH conference. Technical programs and panels allow for the presenting of papers on original research results, trends, and emerging developments. Courses are offered on a variety of topics, from the theory of color perception to the design of graphics workstations, computer animation and image synthesis, and aesthetic issues in computer graphic art for mass media. There is an art show featuring the latest achievements of artists and designers who use computer graphics in all media. Some of the art is two-dimensional prints, others are displayed on CRT's. There are also several installations, walk-through environments, and interactive video pieces.

The film and video show generates the same excitement that the opening of a feature film would enjoy. Its international reputation for creative and technical excellence insures SRO crowds at every screening. Tickets were at a premium this year, and though it's hard to believe at a computer show, scalpers made a bundle.

The main event for many of the attendees was the exhibition. Over 200 exhibitors displayed the latest in hardware/software for computer graphics. Several products were of special interest. Micro Core Ltd from England showed off a color Macintosh. This was based on a 512K Mac with additional graphics hardware based on an 8088 CPU and a 720 graphics controller. It included a frame buffer of 512K (upgradeable to 1 Meg), and gave 768 x 576 pixel resolution, with a capability of showing 256 colors at a time from a palette of 16.7 million. Output was RGB with a gen lock and frame grabber option. Cost was around \$6000. Commodore showed the Amiga, a 68000-based color computer with an icon-based operating system. It was a mob scene at their booth (see last month's article for more details). Mindset showed their IBM compatible graphics systems. This is a hot little professional-quality graphics workstation that runs the Lumena graphics software from Time Arts. Dicomed and Gene-graphics displayed their high-end workstations for designing business and presentation graphics. Kurta introduced the Penmouse, a cordless graphics hardware interface that combines the best features of a mouse, lightpen, and graphics tablet. Advanced Color Technology showed off a new color ink jet printer with an optional video interface (frame grabber). This slick combination will print out an image in 125 colors in 90 seconds. Don't ask about the price.

All in all it was well worth attending, as over 27,000 people can attest. Next year the show will be in Dallas; hope to see you there.

— Matthew Leeds

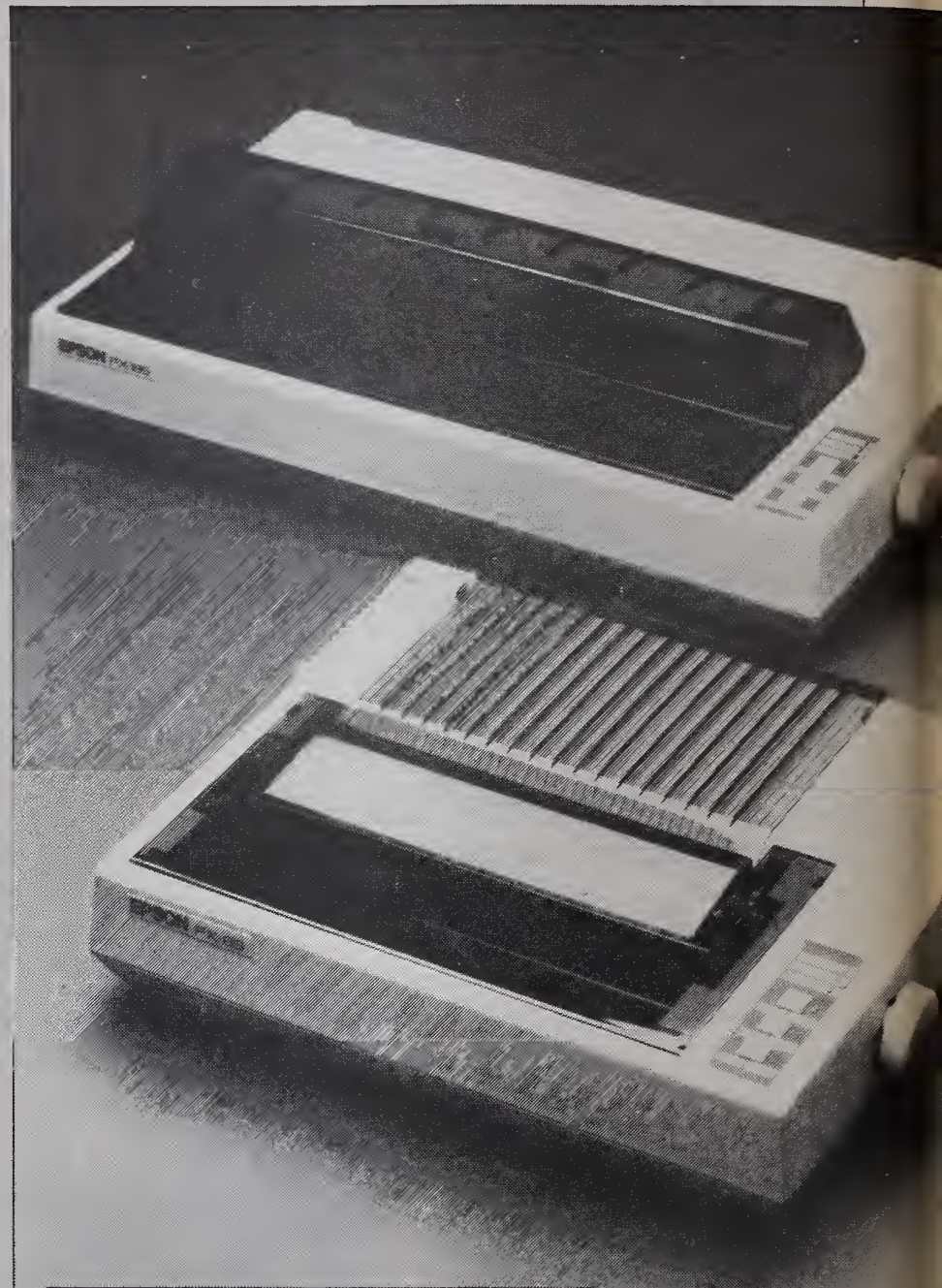
Owners of the popular Epson FX80 and FX100 printers can now upgrade these dot matrix printers to produce copy that is almost indistinguishable from the output of daisy wheel or letter quality printers. The new "near letter quality" or NLQ is not just an enhanced version of the dot matrix print, but an entirely new type font very similar to that on a conventional typewriter. The new print fonts are produced by the standard nine-high print head, so none of the flexibility inherent in a dot matrix printer is compromised by the conversion. In the NLQ mode the print speed is reduced from the normal rate of 160 characters per second to 32 cps, which is still faster than most daisy wheel printers.

FX owners have their choice of two conversion kits. The Fingerprint conversion kit produced by Dresselhaus Computer Products has been available from local printer dealers for several months for a suggested retail price of \$79.95. The kit consists of three multiprogrammed chips which are to be plugged into the main circuit board, replacing original chips. The kit comes with complete instructions for user installation. We installed ours in about 15 minutes, but for those unfamiliar with electronic components, we would suggest dealer installation.

Once installed, Fingerprint is controlled by simple inputs via the printer key pad. Over a dozen fonts may be selected. Most of these, however, are already available via keyboard escape commands in word processing software, or by the CHR\$(27) commands in BASIC programs. The NLQ mode, which is really, new, can be keyboard activated by an ESCx1 or CHR\$(27)"1" command, but it is usually toggled ON or OFF via the printer key pad. Letters printed in the NLQ can often pass for typewritten copy. Proportional spacing with NLQ gives very professional looking copy. Learning to use Fingerprint takes only a few minutes, and the results should make dot matrix printers fully acceptable for even the most formal business correspondence.

An alternative conversion kit will be offered by Epson America later this summer. This kit will have a suggested retail price of \$85.00. Dealer installation of the Epson kit is required, and may push the total price to over \$100.00. The Epson conversion is also controlled via the printer key pad.

In addition to providing the NLQ type font, the Epson conversion also increases the printer buffer from its present 2K to 8K, or enough to hold about six pages of text. For some computers this added buffer could be a valuable extra feature. Printing



This is an example of Near Letter Quality printing from an Epson FX80 printer equipped with the FINGERPRINT modification. The quick brown fox jumped over the lazy dog.

six pages at the NLQ speed of 32 cps could tie up the computer for an annoying period of time. For computers that feed the printer via a spooler file, the added buffer capacity is less important, since the computer can accept new input while printing is in progress.

For IBM users both conversions offer a special advantage. Unmodified FX printers can not download and use the IBM graphic character sets. With either conversion installed, moving one dip switch on the printer will permit full use of the IBM graphic characters. With Fingerprint, an additional dip switch setting will also facilitate use of Apple graphic characters.

Epson America has recently announced that their widely used FX80 and FX100 printers will be superseded

by the new FX85 and FX185 models. The FX85 will have 80 columns and the FX185 will have 136 columns. These new generation models will feature NLQ print mode, an 8K buffer, plus full IBM graphic capability. The FX85 and FX185 are expected to appear later this summer with suggested retail prices of \$499 and \$699 respectively. With either of these new printers or upgraded earlier FX models, users can now have all the speed, flexibility, and graphics capability of a dot matrix printer plus the NLQ font for formal business correspondence.

— John McMullin

Newly announced Epson printers models FX85 and FX185 will feature Near Letter Quality printing, full IBM graphics compatibility, and an 8K buffer.

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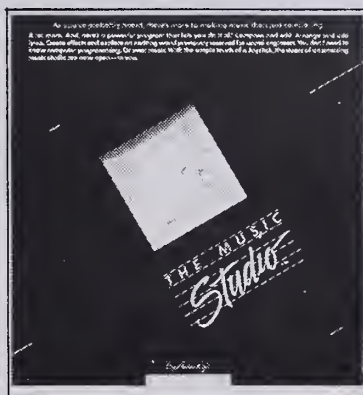
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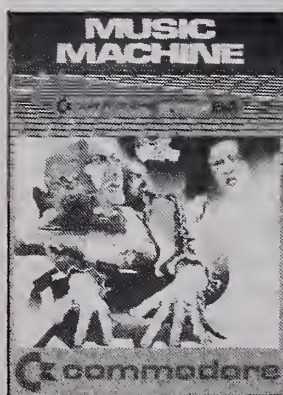
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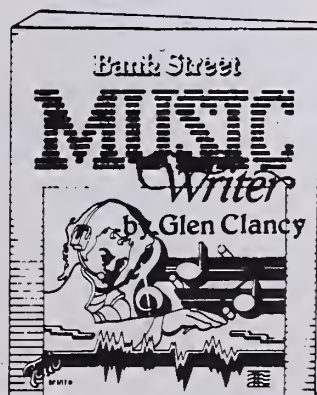
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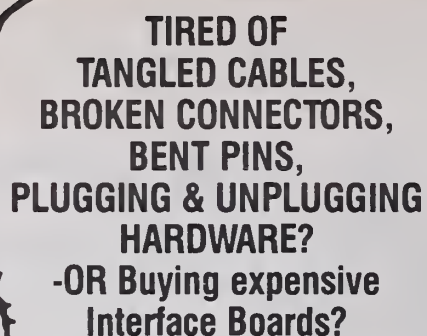
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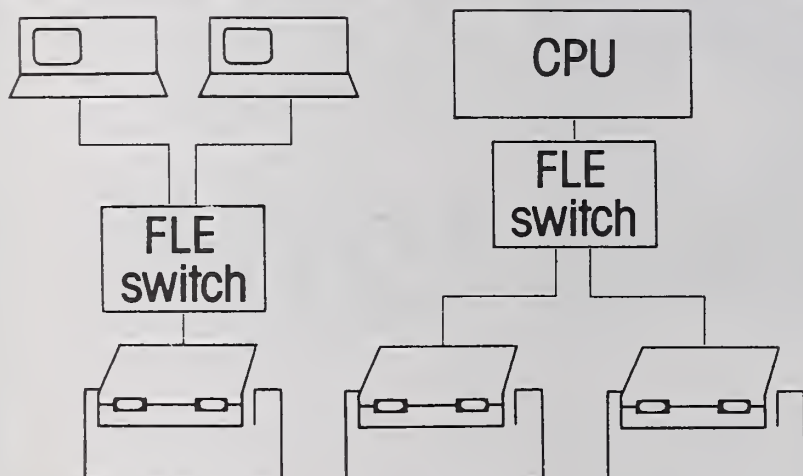


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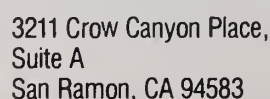


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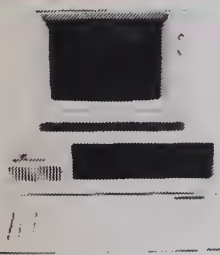
Soft Style of Honolulu (800-396-6368) showed **printer drivers** for the HP LaserJet, HP ThinkJet, TI 85X/

New books of interest to developers: **Macintosh Revealed** by Hayden/Apple Press (2 volumes), **The Complete Macintosh Source Book** by Doug Clapp and Pat Ryall, \$25 from Info Press (yes, it is complete); **One Flew Over The Quickdraw's Nest** by Greg Lewis, \$25, available from MacAmerica, 18032-C Lemon Dr., Yorba Linda, CA 92686; **Macintosh Pascal Illustrated, The Fear And Loathing Guide**, by Scott Kronick, from Addison-Wesley, \$17.

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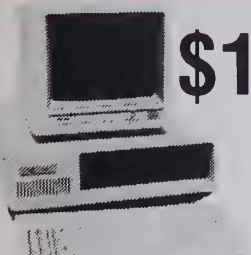
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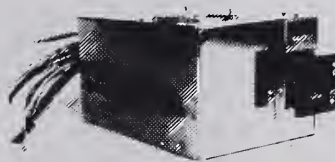
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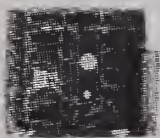
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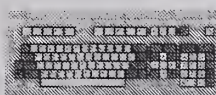
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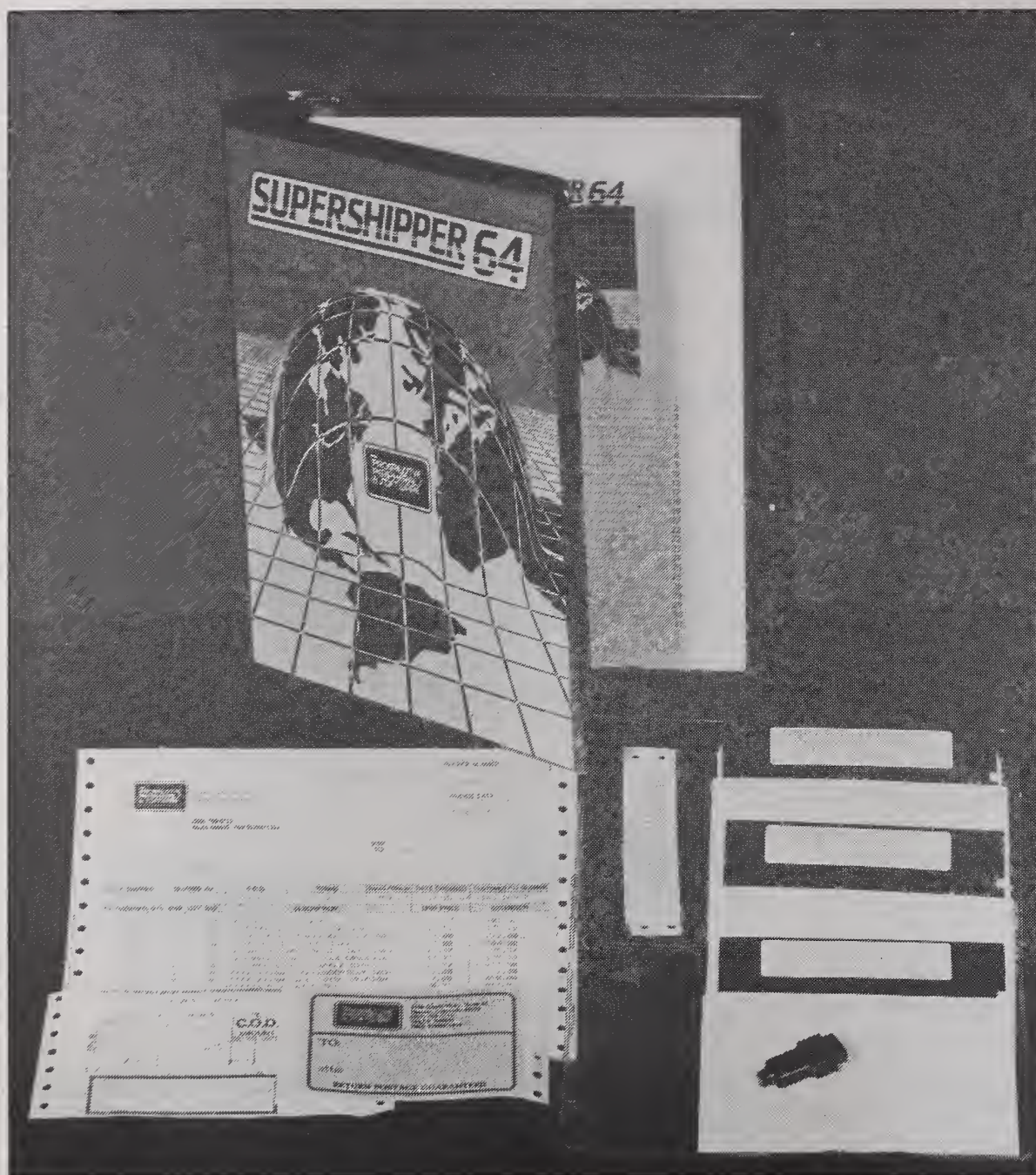
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ACCOUNTING

SuperShipper 64

For: Commodore 64

Suggested retail: \$99.95

Reviewed by: Matthew Leeds

Steve Spring runs Progressive Peripherals & Software. The company started small, and grew at a tremendous rate. When he needed a computerized invoicing, billing, and shipping system to handle the increased volume, instead of buying a high-end turnkey system, he created one that ran on the computer his company got rich servicing, the Commodore 64. In the process he ended up with a low-cost order invoicing system that any start-up business can afford.

SuperShipper 64 is an amazing program. The first time I saw it up and running at the Commodore Show in February I was struck dumb. There was a single C64 driving three printers and pair of disk drives. Each printer had a different set of forms in it: invoices, COD tags, and mailing labels. My immediate thought was how similar it looked to a hot-rod VW bug. Once I talked to Steve, I began to see the logic of the design, and when I compared the cost of any other comparable system I saw his market.

The system requires a minimum of two disk

drives. One drive holds the accounts disk, with a capacity for 800 accounts, and the other drive holds an invoice disk with a capacity of 500 invoices and product information on 200 products. By adding a third drive and placing additional product information on it, you can increase the number of products by 2000. The full hardware potential is five disk drives and four printers, with support for IEEE devices. As you can see, it sounds like a lot of equipment, but for under \$2500.00 you end up with a full order processing and tracking system.

The software is not copy protected, and you are encouraged to make backup copies of everything—program disks, data disks, etc. To use any of the print functions, you must insert a "key" into the joystick port. This is a fair way to protect software, but, frankly, without documentation this program would be difficult to use. The manual is well laid out, very complete, and given the complexity of the program, easy to follow.

It's not possible to cover all of the features that SuperShipper 64 supports. It simply is everything a small to medium size mail order house would need to process, invoice, and ship orders. Pricing, terms, backorders, shipping info, product info, customer info—it's all accounted for. The software is almost idiot-proof. It checks each entry for errors, checks to see if the correct disk is in the drive, and generally helps you along until you've

had your first cup of coffee in the morning. Included are utilities for repairing "bombed" disks and data disks damaged during a power outage. This system is thorough.

There are a couple of points I should mention before you rush out and buy SuperShipper 64. This is a very powerful piece of software, and it takes study and effort to learn to use it to its full capacity. PP&S has included a sample accounts and invoice set for you to practice on. Do so.

PP&S does not have a high opinion of the Commodore 1541 disk drive. You may want to consider either the MSD drives or the Commodore IEEE drives. Also, to print out reports (and you will want to), you need a non-Commodore printer. I do not have a high regard for Commodore printers anyway, so this is no great loss. However, to connect more than one printer to the C64 requires some special hardware, available from PP&S.

If you have no experience with Commodore equipment, find a friend that does. There are some unique (odd) quirks to the C64, and it would be best to find out about them secondhand. Don't get me wrong, it's a great system, but like any, it has its own set of good/bad features. As in all cases, buy the software first, read the documentation, then buy the hardware. PP&S can be reached at (303) 825-4144.

PROGRAMMING/COMPILERS

Clipper

Published by: Nantucket, Inc. of Malibu CA

Requirements: IBM PC, or XT or compatible w/256K RAM

Suggested retail: \$700.00

Reviewed by: Laurie Foster

If you've been using dBASEIII to develop application systems and need to speed up execution time, the Clipper compiler for dBASEIII may be just what you've been waiting for. It works, it's fast, and it's an excellent implementation of an idea whose time came quite a while back. It looks like quality control has done a good job, and Clipper can be relied upon—assuming you use it correctly. Future releases promise to deliver an even more exciting and useful product.

The Clipper software includes the compiler, which converts your source code to an object code .OBJ file, and the linker, which converts the compiled object code into a machine readable .EXE file. Once compiled and linked, your application can be run on any 256K RAM computer that runs PC/MS DOS Version 2.0 or later. It need not be an IBM PC or clone, and it does not require the dBASEIII software to run.

Because dBASEIII is an interpretive language, it provides error checking and translation—line by line—for every line of source code encountered during program execution. If there is a problem, the interpreter displays a message and lets you make on-the-spot corrections. Obviously, this instant feedback can be a great debugging aid during program development. However, the line by line error checking and translation (into machine readable code) takes considerable CPU time and greatly slows the execution time of your application.

A compiler, as contrasted to an interpreter, goes through this same line-by-line error checking and translation process, but it does so only once, when the source code is compiled. The output of error-free translation—your machine-readable .EXE file—is saved to disk and used thereafter to run your application. Running a pre-translated execution file results in dramatically faster processing time.

BUSINESS SOFTWARE

PROGRAMMING/COMPILERS

Clipper would be easier to use if it weren't for the really poor documentation, which mainly leaves you to figure out procedures by trial and error. Using Clipper requires two basic steps. First, you create an object file by telling Clipper to compile the program at the top of your calling hierarchy. It will find and compile all subprograms. If no fatal errors occur, Clipper produces a file containing object code for your entire set of nested programs.

The second step is to link your object code file into the Clipper library of subroutines. This can be done using the linker provided by Nantucket, or using the linker that comes with DOS. Both of these steps were accomplished automatically by the 2-line batch file that comes on the Clipper system diskette — although I did have to alter it slightly before it would work smoothly on dBASEIII programs in a directory other than the one inhabited by the Clipper software itself.

There are several advantages to using a compiler over an interpreter. The primary advantage is a dramatic increase in execution speed (from 2 to 30 times faster). Another good point is source code security. If you are an application systems developer, you can retain exclusive control over your programs simply by distributing only the machine-readable execution file produced by Clipper. It is virtually impossible to generate source code from relocatable object code.

The use of a compiler can also result in reduced cost to end-users. Since neither dBASEIII nor the Clipper compiler is required to run your machine-readable execution file, the end-user is required to pay no costs other than the price you charge for your own application. There is no license fee for running execution files produced by Clipper, a rare boon to the developer, since most compilers include run-time licensing fees that substantially boost the cost of your application system.

There are some constraints built into dBASEIII that can seriously limit your design freedom if you are building a large & sophisticated application system. Clipper provides some extremely powerful language enhancements that could significantly expand your design freedom. Some key enhancements are: 250 open files, 64000 active variables, 1024 fields per record, user defined functions, memo field manipulation, scientific notation, recursive/nested macros, context-sensitive HELP, error-trapping, multiple SET RELATIONS for a single file, and various other new functions.

These advantages come with certain disadvantages. Some useful dBASEIII commands are not available with the Clipper compiler. If you have used these in applications developed with the dBASEIII interpreter, you will have to remove them from your source code and find another way to get the job done before compiling your application. Commands unavailable with Clipper include: ASSIST, BROWSE, CHANGE, DISPLAY/LIST STRUCTURE, EDIT, INSERT, PEEK(), POKE, SET, and interactive APPEND (APPEND BLANK, REPLACE can be used).

I agree that most of these commands are appropriate only for use with "raw" dBASEIII, and do not belong within an application. However, I have a real complaint with the decision not to implement the BROWSE command. I use it judiciously but significantly as an integral part of my user-interface — and will be forced to do some extremely laborious programming to achieve the same functionality without this powerful dBASEIII facility. (You can call the dBASEIII interpreter within Clipper-compiled code, which may provide a cut &

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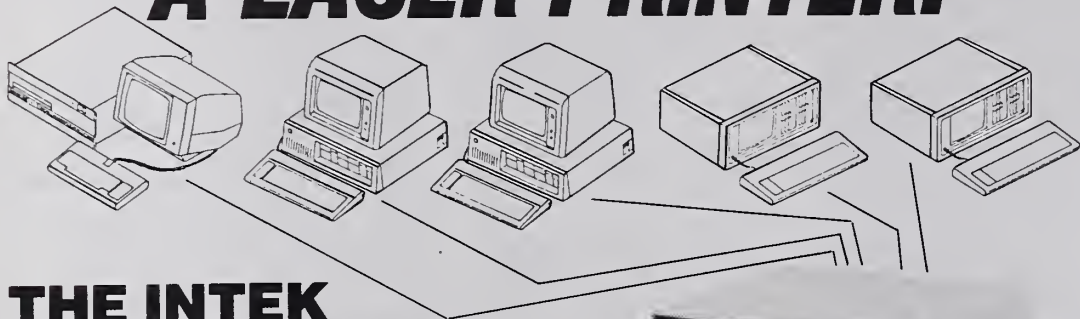
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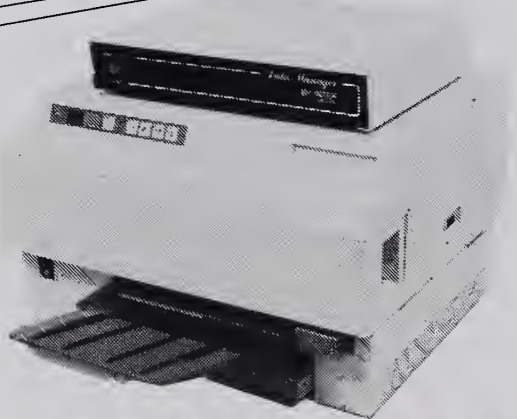


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paste method of grabbing back some of the dBASEIII functionality not included or not yet provided by Clipper.)

Another language limitation involves the use of macro drive designators (DD & drive:MYPROG). Although this is fine during Clipper execution, programs preceded by a macro drive designator cannot be found when Clipper tries to follow your calling hierarchy. If you need to use macros for drive designators on called programs, you will have to compile each called module explicitly and separately—and then bind them together with the linker.

For technical reasons, Nantucket was forced to implement a number of commands with slightly different syntax or—in the case of index files—to use different file extensions. Although this will not affect your system design or require laborious detour programming, you should expect some tedious conversion effort before successful compilation.

If you know these differences in language usage before developing your application with the dBASEIII interpreter, you will be able—in some cases—to use the language in such a way as to be valid in interpretive as well as compiled mode.

Clipper creates & uses index files that are incompatible with those generated by the dBASEIII interpreter. This causes some inconvenience in switching between compiled and interpretive mode. The manual states: "The advantage to this is greater indexing speed and considerably smaller index files." However, I find that Clipper's index files are consistently 10 to 20 percent larger than those generated by dBASEIII.

There is a real difference between developing in an interpretive environment and developing in a compiled environment. In my opinion, there's no contest—the interpretive environment is far superior for development. You can experiment with the language—try out small steps and see how they work. You have built-in & powerful debugging features. You can make quick changes to small segments of your source code, and immediately rerun it for instantaneous results. A compiled environment provides no such instantaneous feedback. To test the results of a program modification, you must re-compile and re-link all programs in the calling hierarchy being tested.

This process may be painful to someone (like myself) who has become hooked on the instant gratification provided by an interpretive environment. I am tempted to avoid using the many powerful language extensions available with Clipper—for the simple expediency of using the dBASEIII interpretive environment during the entire development process. I'd rather wait until no further program changes are necessary before compiling my application.

In some instances, it may be possible to belatedly take advantage of Clipper language extensions without sacrificing the benefits of an interpretive environment during program development. For example, I recently had to change an application design because it violated dBASEIII's limitation of having only 15 files open at one time. Although I could have closed some of these files in order to open others, this extraneous opening and closing of files within a single data capture operation slowed performance unbearably. Had I known, at that time, that Clipper would be available to remedy the situation once development was complete, I could have kept my original design and used file switching as a temporary stop-

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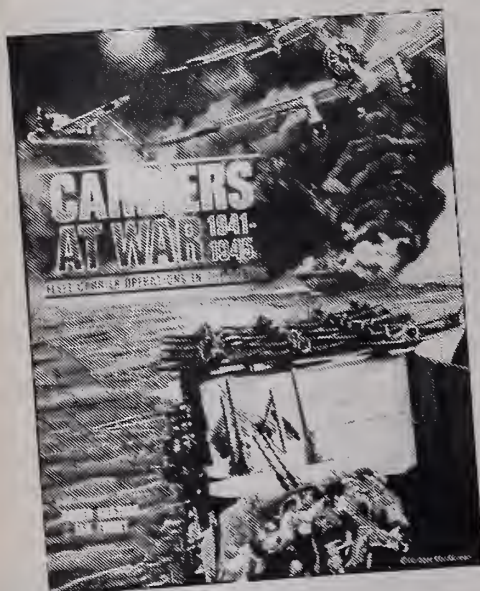
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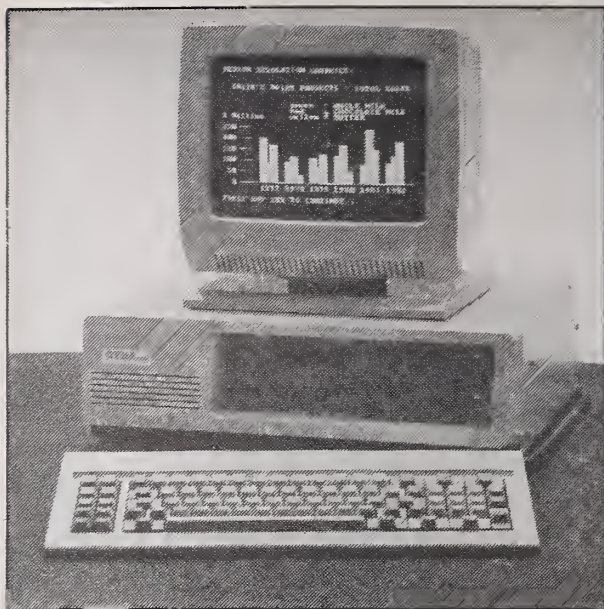
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gap until my application was compiled.

Similar devices may allow one to remain in interpretive mode during development — while using an ultimate application design that assumes availability of certain language extensions provided by Clipper. It will certainly take considerable creativity and determination to get the best of both modes (interpretive and compiled); but there is real hope, especially since interpretive dBASEIII can run compiled programs, which gives you the option of enhancing and compiling subprograms incrementally, while source code still under development remains in the interpretive mode.

Clipper's speed is really impressive. Screens that took several seconds to paint themselves on my CRT now flash up too fast for me to time them. I'd have to call it instantaneous. Unfortunately, it still takes time for disk access — but that's a mechanical problem no compiler could solve.

Error messages sent to the screen during compilation of your source code are terse, but understandable. These can be routed to a disk file and saved for your review. Error messages sent to the screen during execution provide insufficient information, and the manual offers no help at all.

Some key features of the Clipper compiler will not be available until the next release which is scheduled for mid-August 1985. These include: CREATE and MODIFY REPORT/LABEL (Clipper utilities that replace dBASEIII's report and label generators), REPORT, LABEL, JOIN, READ SAVE, scientific notation, SET PATH, SORT, TOTAL, UPDATE, and DEBUGGER utility. The next release will be provided free of charge in exchange for the current version.

Clipper costs \$700, a fair enough price, particularly considering the lack of any licensing or runtime module fees. Although copy-protected, Clipper uses a mechanism that minimizes your inconvenience by permitting installation on hard disks and allowing you to de-install it from one computer so you can re-install it on another. Two hard disk installations and two floppy disk installations can be run simultaneously.

Nantucket provides two sources of technical support for registered users: on-line assistance via The Source, or direct assistance from Nantucket, for an additional charge. Because Nantucket provides neither an 800 support number nor free technical assistance via phone, you may find it worthwhile to get Clipper through a value-added reseller that includes technical support with the purchase price.

WORD PROCESSORS

NewWord 2.16

Published by: Newstar Software Inc.

For: CP/M

Suggested retail: \$100.00

Reviewed by: Robert D. Athey Jr.

Word processing packages come in two varieties, the kind that came with the computer, and the kind you buy because it has some features you don't have and would like to use. NewWord, introduced by Newstar Software Inc. in late 1982, was bundled with some computers (the Morrow, for instance) and was offered for sale from software retailers, as well. It is most often compared to WordStar, as they both use very similar command schemes. The most frequently cited difference between them is the price — the NewWord being several hundred dollars cheaper even initially (at \$249, then). The of-

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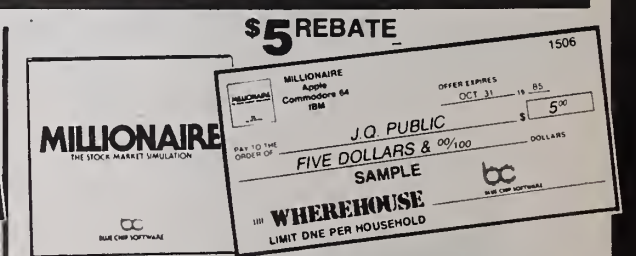
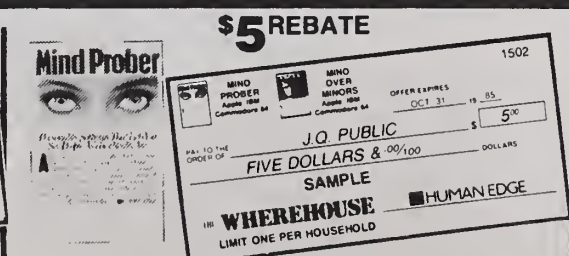
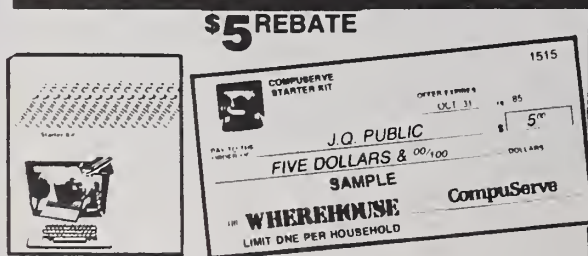
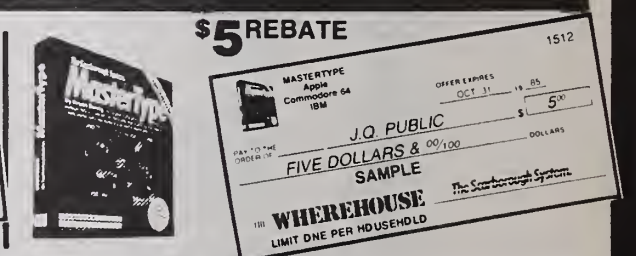
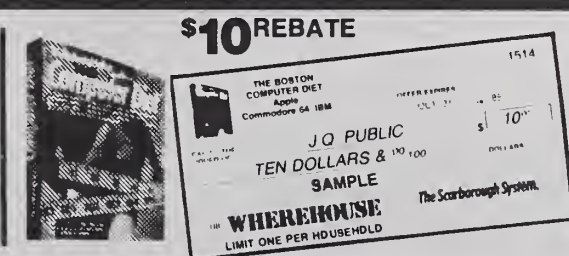
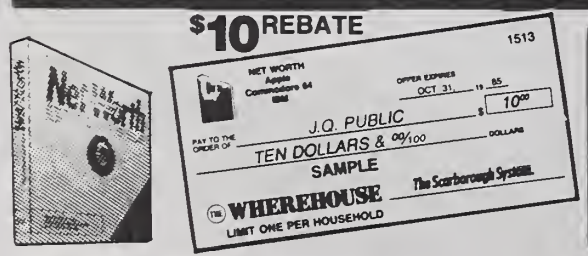
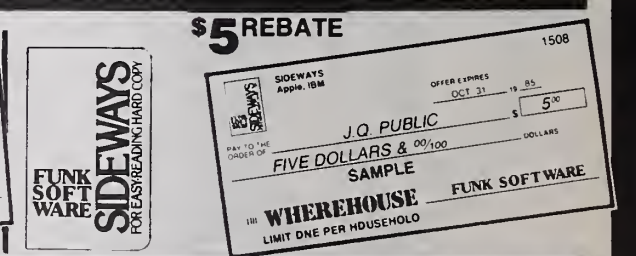
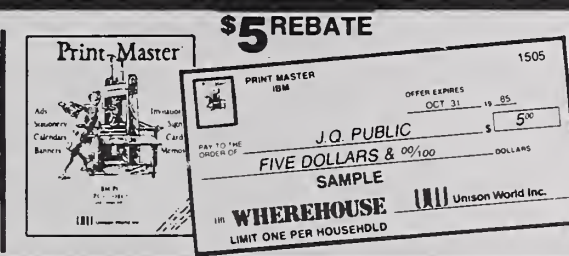
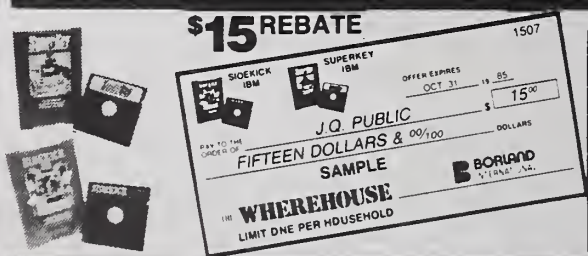
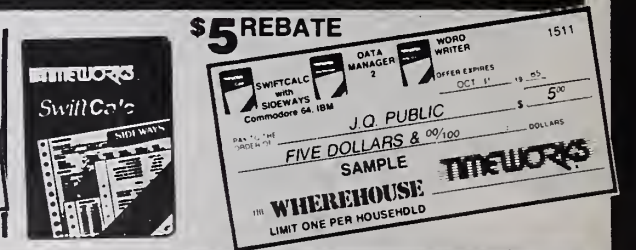
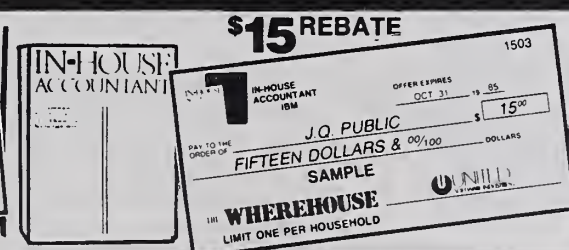
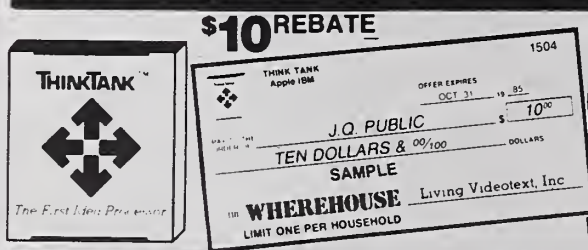
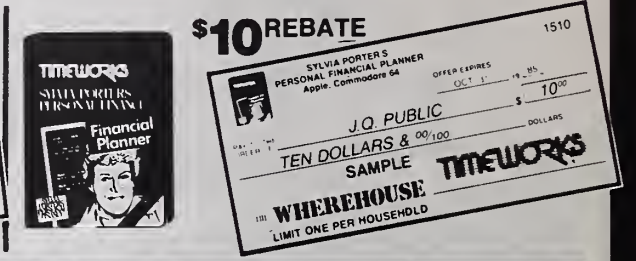
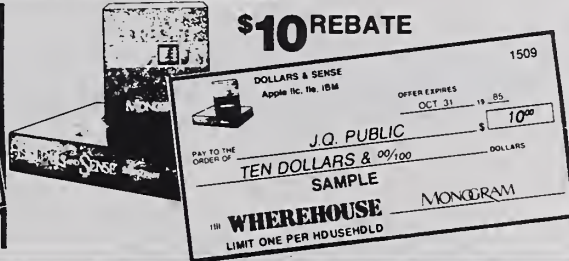
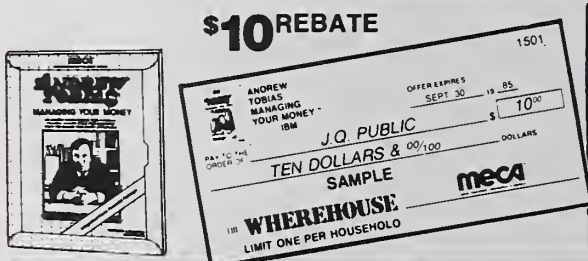
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WORD PROCESSORS

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The key features of NewWord boil down to several classes of "can-do." The first class is types of documentation. The initial menu gives you a choice of document-mode or non-document-mode, which essentially boils down to how the words you process are presented to you. The document-mode is formatted to show you on-screen what your letter, article, or whatever will look like, including margins (top, bottom and sides). The non-document-mode, essentially an ASCII file, gives you almost the same screen appearance, but with no sentence wrapping or bottom margin, and is used for database files or programming in some language. Neither of these points is all that different from the WordStar. However, included in the NewWord program file is a built-in capability to merge names, addresses, text, or whatever, into a file that you are printing — essentially a built-in MailMerge. This is not a separate program, but a built-in feature of NewWord. My own experiment with this feature was to knock out ten letters to various elected officials about another frivolous action taken recently by a California bureaucracy; and it was a treat seeing the letters to senators, congressmen and assemblymen just rolling off the printer — zip, zip, zip. It's a simple matter of constructing the address file in a certain format (it works in either document or non-document modes), and constructing the letter in a format that cues the address file as to what goes where. The documentation drolly reminds you this is how you get those letters with your name several times within the text, misspelled each time. I've never tracked through the MailMerge feature of Perfect Writer, as it looked too difficult/complex.

Another class of operation NewWord can do is in the individual writing/editing operations. Key points I find useful are:

1. Deletion by the DELETE key on my Kaypro keyboard, a letter at a time, or by CONTROL character commands that allow you to delete character, work or line. The CONTROL character deletions can be "unerased" or re-deposited in a new place. I used that feature to lay down frequently repeated words or phrases in any document, such as NewWord in this one.

2. Realignment of a paragraph electronically after it was set up to the margins and word wrapped, and you spoiled it by going back in and editing. Again, you use a simple CONTROL character, and it's done.

3. The find/replace is also a simple CONTROL character operation.

4. The alternate character set in older Kaypros has Greek letters (useful for mathematics equations) among the myriad of characters. These are difficult to get to without some fancy fiddlesticks in Perfect Writer, but you simply use the print CONTROL character in NewWord that tells the printer to use an alternate ribbon color. The enclosed tabulation shows the alternate characters and their keyboard equivalents. I have the impression that the Morrow computer can also do this. The later Kaypros have a different alternate character set that is more oriented to graphics, and they do not have the Greek letters.

5. The software is able to chain several files for printing, without overloading memory. It will even chain from one disk to another without the need for a warm boot. This is important to serious writers, and I could have used it for the 135 page (off my printer) chapter I wrote for a technical book last year.

The last class of can-do lies in the menus of operations offered and the help levels they offer for each menu. There are essentially five menus (which you can turn off, when you get skilled in the art). The menus are:

1. Edit (Always showing, when you start);
2. On-screen Format;
3. Saving and Blocking;
4. Print Controls;
5. Quick Menu (a cut down version of Edit).

Each of the four latter titles shows peripherally on the first menu, and is called up by a CONTROL character. Each menu has several levels of help available, which you can select based on your knowledge/experience level. The menus and help explanations are sufficiently lucid to make one

forget there's documentation (a paperback book, and a pamphlet for updates).

After all this raving on about all NewWord does, you'd think there was nothing I'd see as missing. Ah, but I've better than two years experience with another (albeit complex) software package. I do miss the capability to:

1. Switch two transposed letters or words;
2. Automatically footnote or endnote a text (a feature needed by science writers);
3. Tap a word with a CONTROL character to change it from capitals to lower case, or vice versa; or,
4. Use multiple files in buffers, switching back and forth, copying and moving.

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and moving capabilities in NewWord. However, the technique with NewWord involves depositing the copied block of characters (more than a line from a file) as a separate second file, and then calling that second file for deposition within the text within another third file. It works, so I shouldn't gripe, right?

The NewWord operation is simple to learn. The documentation manual comes as a tutorial (which I do not do — just read — because I am impatient enough to want to do my own documents). That tutorial is constructed to give some fun as well as instruction. The documentation has numerous helpful appendices, including an Encyclopedia that defines each kind of character that does some kind of control of the operation. The installation program for NewWord has many adjustable parameters, and is set up to recognize both my Kaypro and my Pro-writer upon my input. The installation instructions in the manual were painless — not hardware or software jargon (Hooray!). The technical support is practically instantaneous, but recognize that the technical support may (in time) not always be free. The technical support for users who have exhausted the documentation is deemed reasonable by Newstar, but they may get (justifiably) impatient with the calls that suggest the user did not do his homework.

All in all, I heartily recommend this software for the writer of business or correspondence text. It could be handily used by fiction writers, or technical writers that don't do much footnoting. It will certainly help a great deal on the book I plan to do sometime in the next year. All this without even considering the phenomenal price. (NewWord 2.16. Newstar Software Inc., 1601 Oak Park Blvd., Pleasant Hill, CA 94523, (415) 932-2278.)

UTILITIES

Enhancements For CP/M 2.2

Published by: Plu*Perfect Systems

Price: \$32

Reviewed by: Robert D. Athey Jr.

The Plu*Perfect people got together less than two years ago, after they had taken Perfect Writer apart and put it together again with more capabilities. In the process, they decided that the CP/M 2.2 system used with the Perfect programs could be improved to more efficiently use the computer memory and circuitry. They devised a system they call CP/M 2.2e, the "e" denoting the enhancements they have added, some from public domain software and some cooked up at Plu*Perfect. Strictly speaking, Ed Plate (of the technical support division) writes that the system is "Plu*Perfect Systems' Enhancements for CP/M." However, the system label comes up after a cold boot at "Plu*Perfect Systems CP/M 2.2e" at the top of the screen, with the "A" CP/M prompt on the second line.

The Plu*Perfect CP/M 2.2e contains some mechanical controls through software modification. They have incorporated a disk-drive-automatic-turnoff that turns the disk rotation off after a short (settable) time delay. That eliminates a noise we don't need during our concentration on our writing. They have modified the type ahead buffer in the keyboard, from three stroke to twelve. A modestly good typist could outrun the keyboard buffer set at three strokes, especially when the buffer became filled. It takes a phenomenally fast typist to outrun the twelve-stroke buffer. There are addi-

tional features that emulate some of the upgrades Kaypro did in later machines that my 1983 version did not have, such as permanent, serial-port-changeable baud rate settings. The manual makes the point that the CP/M 2.2e is a commercial alternative to ZCPR, a series of public domain software packages that upgrade the CP/M machines' capabilities. I personally was more interested in the extended software capabilities.

The CP/M 2.2e "TYPE" command is substantially extended past that of CP/M 2.2. Not only can you scroll a file past the screen, but you can view it page by page, or even print it, by simple addition of a letter or two after the "TYPE" command. They even give you an instructional file of about 80 lines to let you practice the go-forward/back-up reading drill. The old CP/M 2.2 command "COPY" has been made into the substantially faster CP/M 2.2e command "FASTCOPY." They also included "SD," the "SuperDirectory" command covered in the July CP/M column, and "SWEEP," an early version of the "NEWSWEEP" public domain program covered in the June CP/M column. I still prefer the "NWSWP207" discussed in June, as it has broader capabilities.

The CP/M 2.2e has a "GO" command that will allow you to rerun the last program you ran with no further input. Not all programs will run, only those that will reinitialize themselves. For instance, the "SD," "PW" (the call up for Perfect Writer), "PIP," and "STAT" programs do reinitialize themselves, but some that don't are "DIR," "REN," "ERA" and "SAVE."

The documentation for CP/M 2.2e is good, though it could be written a little more clearly for the infrequent user. The instructions for installation and execution are very clear, and a cute command set on initialization tailor-makes the cold boot greeting personal to the installer. If there are two or more users on your machine, you may want to have each user make a personal copy. You can also preset the cold boot on any disk to prestart a particular program.

There is a special section in the documentation on installing the CP/M 2.2e in a Kaypro 10, and special technical notes exist for installation of CP/M 2.2e on any number of other devices (the Kaypro "Robie"), or devices having SWP coprocessor or Holmes Engineering speed-up boards. There are also technical notes for use of CP/M 2.23 with SmartKey in Plu*Perfect Writer, and a note for older versions of NewWord.

The approach to using CP/M 2.2e is to re-SYS-GEN all your active disks, using the CP/M 2.2e working disk. No problems were encountered in forty or so disks of Perfect Writer and Perfect Calc or a variety of game files. The only quirks that did show up were in a special MBASIC game loading program (KUGRAM DISC NO. 129) were the games all worked and the "MB" loader did not, and in "UNIFORM." The quirk with "UNIFORM" was simply that the prompt was a "4," and transferring of files died after about 15K. Apparently the "UNIFORM" program may only be used with CP/M 2.2. I wrote Plu*Perfect to let them know so they can issue a technical note on it. Their response was that UNIFORM will work with their standard "interrupt system," or with the interrupts disabled, the latter a feature they added with all post-1984 versions of CP/M 2.2e. We shall certainly have further discussion on this point (both my UNIFORM and my CP/M 2.2e are brand new!).

In summary, this package of software is well worth the \$32, even if you are not interested in the other packages Plu*Perfect offers. Plu*Perfect Systems, P.O. Box 1494, Idyllwild, CA 92349, (714) 659-4432.

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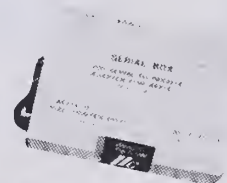


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Court Reporting

PHOTO: BEN JANKEN



Ken Combs, a court reporter in San Francisco, demonstrates the CAT computerized transcription system for court records

In The Electronic Age

By James Evans

If a modern Perry Mason ever reappears on television, purists might notice a small yet significant change in courtroom procedure.

When either the defense or prosecuting attorney wants to be certain of specific testimony, instead of requesting the court reporter to read it aloud, they'll read it themselves on computer terminals on their desks. Monitors also will be on the judges' bench, and even in the offices of attorneys throughout the world if necessary, for them to study testimony seconds after it is spoken.

Also, terminals will be available for people with impaired hearing so they may follow the trial as it progresses without signing translators as possible distractions to court proceedings. For the genuine Perry Masons of the legal community, this is not some primetime fantasy, but is taking place now in courtrooms across the country.

Computers, which have been slow to make their mark on the law, are in this case introducing some welcome speed into an infamously sluggish justice system. Transcripts of testimony that once required many tedious days at best, and often weeks into months, can be delivered electronically as the testimony occurs, with printed copy usually provided within hours.

Take, for example, the recent New York libel trial of CBS on charges brought by retired Gen. William Westmoreland, a former commander-in-chief of U.S. forces in Vietnam. During 68 days of testimony, 9,745 pages of transcripts were generated. Previously, using traditional stenographic machines, those transcripts would have required a court reporter, with a team of secretaries helping to edit and type, weeks, if not months, to prepare.

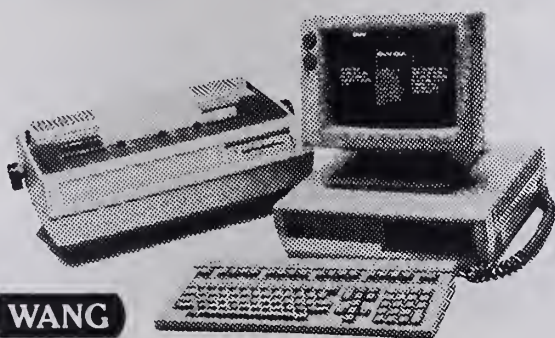
Instead, with the use of computers, printed transcripts can be ready within hours after witnesses have left the stand. In the CBS trial, which was settled without a judgment, lawyers and the press received the morning's transcripts the same afternoon. According to Joel Hillman, chief court reporter for the Federal Court of the Southern District of New York, as many as 60 pages of transcripts an hour were produced, accessible both in type form and computer data.

What makes this speed possible is a system called computer-aided transcription (CAT). It is being embraced not only by court reporters eager to enhance incomes that already reach upwards of \$60,000 annually, but also by law firms seeking an edge on competitors, and by judges anxious for quick delivery of testimony as a means to cut the enormous backlog of cases clogging the courts.

The appellate courts are especially concerned about the time lag between trial and prepared transcripts, and recently have publicly criticized

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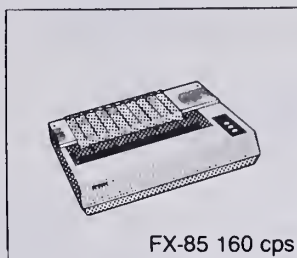
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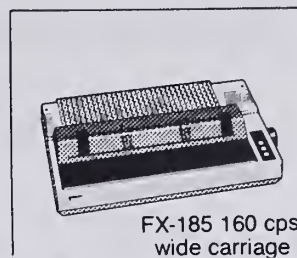
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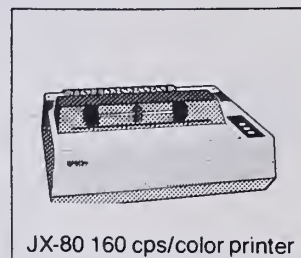
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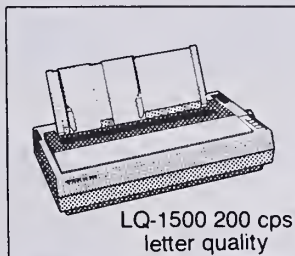
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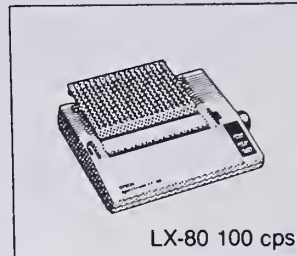
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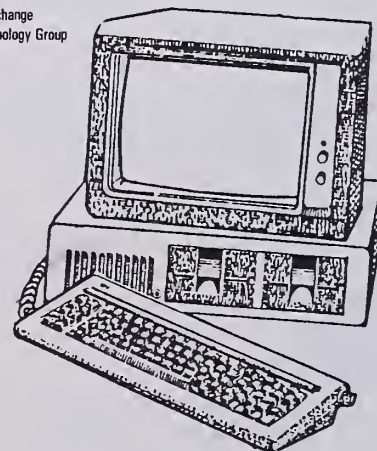
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court reporters for laxity bordering on dereliction of duty. Justice Anthony Kline, presiding justice of Division Two of the First District state Court of Appeal, told the legal daily *The Recorder* that his court was "becoming a lot stricter with court reporters than in the past," and has "seriously considered contempt proceedings with court reporters who are unconscionably late in providing transcripts."

Reporters now have 60 days plus a possible 20 day extension to produce trial transcripts in criminal appeals, and 90 days to deliver them in civil appeals. However, according to Division Five Presiding Justice Harry Low, who also complained to *The Recorder*, he has known cases where transcripts were delayed up to two years.

Justices may find reporters "not competent to act as official reporter" in cases of tardiness, and require the reporter to concentrate exclusively on the transcript until it is finished, even if it means sacrificing income from other work. In extreme cases, the court may find reporters in contempt for missing a transcript filing deadline, though justices rarely have resorted to such action.

As if augmented earnings and threatened contempt citations weren't enough reason for adapting to the new technology, court reporters are facing a challenge from another direction. For years they have been hounded by the possibility of being replaced by audio recording machines. Court reporter organizations, such as the California Court Reporters Association (CCRA), headquartered in Sacramento, have effectively lobbied against the use of audio equipment in courtrooms, but with the justice system under pressure to reduce the backlog of cases, that may be changing.

In May the Assembly Judiciary Committee (AJC) unanimously approved legislation that would allow the Los Angeles Superior Court to replace reporters in certain circum-

stances with audio recording equipment. The bill, AB 825, authored by AJC chair Elihu Harris (D-Oakland), would authorize use of the machines for a three year experimental period. Audio recording devices are now employed in some municipal courts, but California law prohibits use of the equipment in courts of record.

CCRA president Candice Rees responds to the proposed bill by charging that transcripts generated from such a method would be substantially less accurate than those produced stenographically. Audio recording machines, she argues, don't discriminate between sounds and words, nor between similar sounding words. They also often fail to pick up low-voiced testimony. The legislation was in the Senate Judiciary Committee awaiting review as of Aug. 16.

"That bill is not in its final language," says Rees. "We're still negotiating with its proponents [Harris, the state Judicial Council and the Los Angeles Superior Court]. Our position is that the state-of-the-art in court reporting is a live reporter using a computer. Audio tapes are not a better answer in either cost-effectiveness or accuracy than CAT."

Developed a decade ago and used selectively for the past five years, CAT, with some wrinkles that need to be ironed out, is rapidly being recognized as a boon to everyone involved in the justice system, even with potential legislation favoring expanded experimentation with audio equipment. Although only a third of the nation's 30,000 court reporters currently use it (with 35 percent having adopted it in California, according to CCRA figures), CAT is already signaling an acceleration of interest in computers and data communications by both the stenographic and legal professions.

"It's the wave of the future," predicted Ken Combs of Combs and Greenley in San Francisco, the largest court reporting company in the city. "Not everyone is using it now,

but they will if they want to stay competitive." He explained that law firms are starting to understand the edge in speed that computers provide, and are beginning to use modems for not only sending and receiving transcripts, but also for exchanging evidence and briefs with both mainframes and personal computers.

The way CAT works is that court reporters strike keys on a stenograph machine that either generates a paper tape with symbols corresponding to English or produces the paper tape and an electric cassette tape. The paper tape is optically scanned by a computer developed by Xscribe Corporation in La Jolla, or the electronic cassette is fed into a computer manufactured by BaronData Systems in San Leandro.

Both systems provide the same service, which is to translate the reporter's symbols into English and make the transcripts accessible on computer monitors so that editing and correcting can be done swiftly. The computer holds a dictionary of 30,000 to 70,000 words that match the stenographic symbols. Symbols that the computer can't recognize or that don't have a corresponding word remain spelled stenographically. Reporters then use the paper tape to crosscheck for gaps or errors.

The finished documents are then turned into hard copy on high-speed printers and delivered to waiting lawyers and other interested parties. Depending on the volume of testimony, high speed printers and copiers can have collated transcripts available within a week, and in most cases on the same or the next day. Testimony also is available electronically on monitors in the courtroom and elsewhere, as fast as the reporter can record it.

Xscribe's optical scanner, introduced in 1978, eliminates the need for a modified stenograph machine to produce both paper and electronic tapes and has propelled the once small start-up company into earnings

last year of \$1 million on \$10 million in sales. The system can translate as many as 750 pages an hour, and for court reporters who get paid per page, that's a phenomenal advance over typewriters.

The company sells its single-user system, which comes with a Winchester disk with storage capacity of 10 million characters, for \$14,900. It also offers a 20 megabyte system for \$24,900, and a 35 megabyte network that accommodates up to eight reporters for \$39,500. With the addition of a cassette drive, 50 reporters can access the computer at one time.

BaronData, which last year earned \$1.3 million on \$18 million in sales, sells both transcribing computers and stenographic transcribers that weigh 12 pounds and employ a standard stenographic keyboard. The transcriber sells for \$2,795, while the computer ranges from \$13,900 to \$39,000. "The difference," explains Suzanne Dotson, the company's product marketing manager, "is that the high end units can perform more translating, editing and printing functions simultaneously, and have more storage capacity than the low end units."

She added that BaronData has sold more than 1,200 computers and 5,500 transcribers, and that the market is expanding. "Only a third of the court reporters are using computers," she said, "and another third is ready to use them. The resistant third is an older group who are gradually being replaced."

However, while it seems clear that CAT systems eventually will be adopted by most, if not all court reporters, those who don't soon make the switch won't necessarily be out of business. "Computers allow reporters to earn a lot more money than before," observed a reporting student being trained on a CAT system. "But there's so much litigation that reporters can work regardless of whether or not they know how to use the new equipment." □

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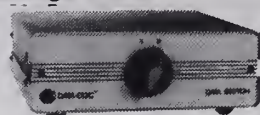
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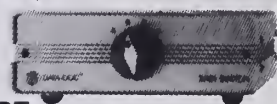
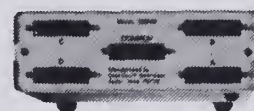
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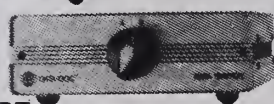
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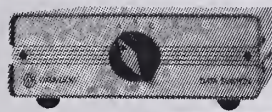
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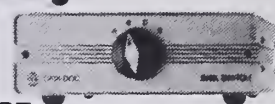
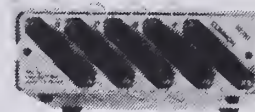
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New Choreographer's Tool: Dance On Microcomputers

By Tom Ulrich

Few forms of art are as fleeting as dance. Choreographers and dancers describe it as an illiterate art. Without a dance score, there is no lasting record for most of the world's classical and modern dance repertoire.

Fewer than 300 classical ballets and modern dances are preserved from cultural extinction through dance notation. Some choreographers have tried to create a formal notation system for dance like the one composers use for music, but none has matched the accuracy and the expressivity of a musical score.

Dance has depended upon an oral history to preserve dances from extinction. If a contemporary ballet company wants to stage *Romeo And Juliet*, the word goes out to the handful of dancers who witnessed an early performance. In the absence of these eye-witnesses, the choreographer relies on the limited "vocabulary" of steps that make up classical ballet to reconstruct *Romeo And Juliet*.

Modern dance, with its unrestricted "vocabulary" of steps, relies entirely on the collective memory of the dancers. The captain of a modern dance company instructs the company in the repertoire created by its founding choreographer. Without a useful dance notation system, when the choreographer dies and the dance troupe disbands, the carefully cultivated repertoire faces extinction.

Filming a performance for the historical record has problems, as Teri Mason, Vice President of Mirage Graphics and a professional musician, observes. "Take the ballet scene from the *Marriage Of Figaro* sequence in the movie *Amadeus*," she says. "That particular performance by the Twyla Tharp Dance Company, while beautiful, does not tell an aspiring dancer anything about how the piece was originally danced."

"There are technical problems as well," she continues. "Video tape and film record a dance from one angle and in two dimensions only. Dancers in large groups may be lost because the camera is too close."

Mason sums up the need for dance notation: "Dancers cannot learn individual parts independently of their dance troupe; there is no manageable

master score. Imagine what Symphony Hall would be like if the conductor had to teach each individual part of Mozart's *Jupiter Symphony* at rehearsal, and the musicians had to perform their parts from memory at the concert."

Written notation has flaws too. "If written dance notation was practical," she says, "it would be as developed as musical notation. Symbolic dance notation requires a well trained notator to translate steps into symbols. Few dancers can translate symbolic notation back into dance movement. Dancers don't work this way. Dancers learn steps by example," Mason says.

Besides, a ballet can take months for a notator to transcribe. A notator must witness several productions of a dance to capture all its movements. Some choreographers estimate that it takes six hours of notation to capture a full minute of dance.

How, then, can classical ballet and modern dance grow beyond its present historical limitations?

Edward Dombrower, President of Mirage Graphics, former Thomas Watson fellow and professional dancer, has developed a dance notation system that runs on personal computers. His system improves on all previous static dance notation systems because dancers follow his animated DOM (Dance On Microcomputer) notation without translating the choreographer's steps from a set of abstract symbols. "As a dancer, I've seen the need for some form of notation that is immediately understood, and a dance figure animated by a computer provides that nicely," says Dombrower.

The dancer reads the score from the screen of an Apple IIc or IIe computer equipped with a disk drive and 64 kilobytes of memory. The animated figure moves in real time, and the choreographer or dancer can bend the torso, arms, and legs of its androgynous body. The choreographer or dancer can also "walk around" the figure or rotate the "stage" so that they can view the figure from anywhere in the "house." Using Dombrower's method, someone trying to record a dance can play or edit a previously scored dance or choreograph a new one. A dancer can

call up a single step or an entire dance phrase.

Instructions to the dancer or choreographer appear on the screen as a series of menus. The dancer can 'GET A DANCE' or 'REPLAY A DANCE.' The choreographer can 'NOTATE A DANCE' by surveying a second level of menus that manipulates the figure at nearly every movable joint in the human body.

A choreographer can construct dances from individual frames, summon a vocabulary disk to call up basic steps like a Grand Plie, or use the Master Score program to choreograph a whole ensemble.

Dombrower has developed a system in which the dancer masters the fundamental steps of a dance piece from a figure that the choreographer has scored to dance on the CRT screen. Once the dancers have mastered the technique of each step, they can develop the artistic interpretation of each step with the choreographer, much like a symphony orchestra works out its parts with the conductor at a rehearsal.

The choreographer can then demand from a dance troupe what a conductor expects from symphony musicians — first, to have mastered their individual parts before rehearsal, and then to have absorbed the conductor's interpretation of the piece by opening night.

Like a musical score, DOM Notation is accurate, expressive, and concise. It captures the essence of the art, communicates that essence to the performances, and is easily produced and changed.

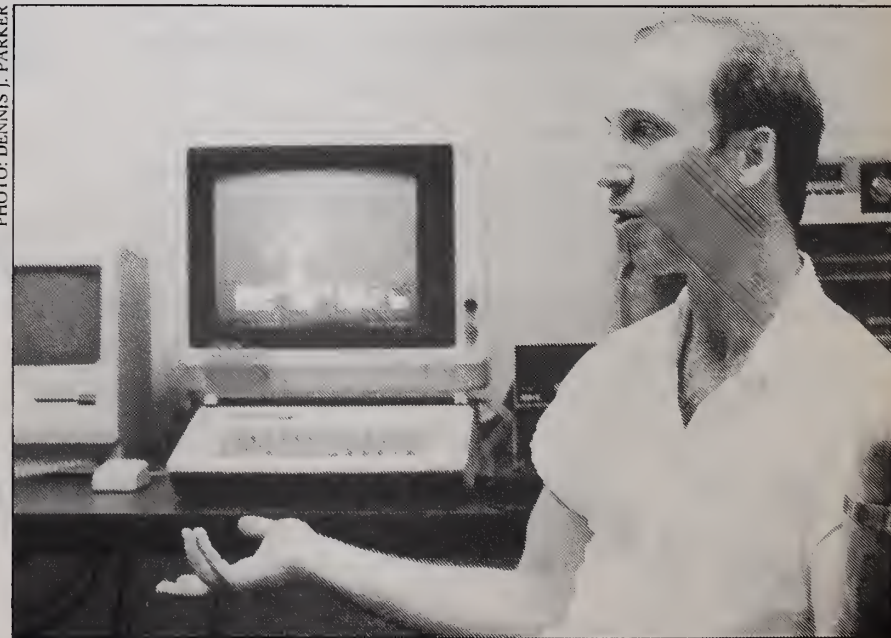
This comparison with music is not welcomed by all dancers. Some dancers feel that using dance notation strikes at the essence of their art — the immediate but ephemeral quality of a modern dance or a classical ballet.

Most dancers concede, however, the need to make dance an art form with a written history. The trade-off between the spontaneity that is lost with notation versus the sense of history that is gained through a dance score is essential to the survival of classical and modern dance. "What if Mozart failed to score the music and words of *The Marriage Of Figaro*?" Dombrower says.

Fortunately for us, he did. But in a world where the words and music of even Antonio Salieri, court composer, arch-villain and self-declared patron saint of mediocrity, survive, *Figaro's* original choreographic score has slipped into oblivion.

But then *The Marriage Of Figaro* has always bordered on a tragedy. (For information on DOM Notation, contact Mirage Graphics, 2720 Manhattan, Manhattan Beach, CA. (213) 546-1234.)

PHOTO: DENNIS J. PARKER



Edward Dombrower of Mirage Graphics created the DOM (Dance On Microcomputers) notation system as a multidimensional design and data storage tool for dancers and choreographers.

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BRØDERBUND

Next Stop World Domination?

In which the Carlston brothers discuss their formula for success; also, their thoughts on the IBM priesthood, their plans for the future, the capital of Outer Mongolia and the whereabouts of Carmen Sandiego.

By Mary Eisenhart

If any software publisher has its finger firmly on the pulse of America's computing heartland, it's San Rafael-based Brøderbund. It's no longer a surprise that every week *Billboard's* software charts show Brøderbund with five of the 40 best-selling programs in the country. What's more interesting is the diversity and longevity of the line: *Karateka*, an arcade-style game, #2 on the Entertainment list, 22 weeks on the charts; *Bank Street Writer*, a word processor, #5 on the eclectic Home Management charts, 99 weeks on; *The Print Shop*, a program for designing your own greeting cards, stationery and the like, evidently a permanent resident of the #1 spot on the Home Management chart, with 57 weeks on; at #2 and #4, *The Print Shop Graphics Library I and II*, additional graphics for *The Print Shop*, with 20 and seven weeks on the charts respectively (they're new products, after all). Upcoming offerings, a graphics and animation program called *Fantavision* and a new

series called *Explorations*, promise to be similarly successful upon release.

There is, as you might suspect, a story here.

One fateful day in 1978, Doug Carlston, who was practicing law in Maine at the time and facing another of New England's winters, saw a personal computer at his local Radio Shack, thought it looked like a neat toy, and bought it. This was a source of considerable hilarity to his brother Gary, who regarded the new acquisition with scorn and derision.

Not that Doug was a stranger to computers; he'd spent some time fooling around with various machines in the Carlstons' Iowa youth, and had had a part-time programmer's job while attending Harvard. He'd given the job up, though; for one thing, five-hour waits for a program to come back from batch processing weren't his idea of fun, and besides, he says, "It interfered with one's basketball."

However, the winter was long and

cold, basketball wasn't much of an option, and Doug spent a good deal of the time playing computer games culled from magazines.

When the charms of Maine blizzards wore off, Doug joined Gary in Oregon and began to consider the possibility of getting into the software business, the idea being that Doug would write programs and Gary would sell them. Their expectations were distinctly modest — Gary recalls that "The first week, my vision, if you can call it that, of the company was to make \$400 a month on the side and find a job one of these days."

The company struggled along, largely as a mail-order enterprise, for a few months, selling Doug's *Galactic Saga* programs, *Tank Command*, written by their brother Don in Iowa City, and eventually a couple of programs licensed from a Japanese company that happened to have an adjoining booth at the Computer Faire.

Fate, however, was about to take a hand, in the form of an itinerant Swedish basketball team.



SOFTWARE:

Doug (l) and Gary Carlston, demonstrating the theory that work and fun coexist nicely.



At a somewhat earlier stage of his career, Gary had spent five years living in Sweden and coaching a basketball team. In 1980 it happened that the team was on a world tour and stopping in San Francisco. Gary flew south to see them, planning to sell a little software as long as he was in the neighborhood. He sold quite a bit more than he'd expected, and on his return Doug took the proceeds and began a series of cross-country selling expeditions, walking into stores and asking the proprietors if they might like to buy some software.

These efforts not only improved sales dramatically, they paid long range dividends. Says Doug, "We met hundreds of computer dealers, and many of them are the computer dealers of today. We worked with them, went through the same evolution they went through. When the mass merchants came along, we didn't immediately abandon ship to

its dealers. Brøderbund regularly holds brainstorming sessions in which employees discuss the type of products they'd like to see. From idea to finished product, each program is subjected to rigorous quality control, from editors who make it run smoothly to a crack team of testers, many in their teens, who work with "finished" products for weeks, trying to crash them, looking for bugs and generally using all their ingenuity to find and eliminate anything that could possibly go wrong.

A bit of exegesis on the company's name and logo, or, as Gary puts the oft-asked questions, "How come you have the slash through the O? Are you Scandinavian or something? And how come you have those three crowns?" "Brøderbund" translates to something like "brotherhood" and is pronounced "Bruderbund." The slash through the O, says Gary, was originally conceived as a sort of pun

them together is that both conceptually and in design they're absolutely state-of-the-art in every case. They're not always huge markets; it depends an awful lot on who we're trying to aim it at.

Gary Carlston: And we're not always the first to do a subject area. We didn't have the first word processor, we didn't have the first printing program, and so on.

DC: But often you look at a marketplace that other people find and say, "Now why isn't anybody doing that with state-of-the-art technology?" It's not that hard to do, we know what the standards are, just to enforce them...

I could look around right now at several major niches in the marketplace, and if you looked at the products, you wouldn't think they were state-of-the-art. It's just that these are the only products in that niche. Every one of those represents an opportunity.

Are you about to take advantage of any of those opportunities?

DC: Quite a few of them. I'd say ones that fall in that category are home finance management, which is not currently state-of-the-art in the products that are selling best; curriculum education software, which is nowhere near state-of-the-art; there's some areas that we can't talk about yet, areas that are even further afield, that are either not being done at all or not quite up to snuff in the marketplace. Some of the animation and drawing programs that've been selling quite well are not — well, they may be state-of-the-art until we release our latest product [Fantavision], but that will change the state of the art. So by pushing the boundaries you can also create a competitive advantage.

Do you revise your existing software frequently?

GC: Yes. Bank Street Writer is currently in its third or fourth incarnation, in response to customer requests.

DC: Customer requests and changes in the marketplace. For example, when we started with Bank Street Writer on the Apple, most Apple owners used the Apple computer with a television set. Television sets in America don't have resolution to enable everybody to read characters on more than a 40-column width on the screen. However, now over 90% of the people that use Apple computers use them with monitors, which can handle 80 characters across with enough clarity that you can read them without eyestrain. We had to change the program to accommodate those people.

Do you feel a greater affinity with the Apple market than the IBM market?

DC: It's changing. In the past it's been a better market for us. The IBM market is not a very deep software mar-

Doug Carlston: "The typical IBM user uses two or three programs and that's it. The average Apple II owner buys between five and seven hundred dollars' worth of software per year, every single year."



sell all of our wares through the mass-market channels. We added those in a reasonable and conservative manner — it's only 20% of our sales. The bulk is still the people we've supported and who've supported us since 1980. They're old friends of ours. We find out what they think they can sell, and that's what we develop."

As the company grew and prospered, the Carlstons moved their operation to the Bay Area in September 1981. Gary recalls, "Technically we were getting scared. We didn't know what was going on. Apple had changed their DOS, and we didn't know" — a potential catastrophe since most of their market was Apple users.

Brøderbund today occupies four buildings, mostly in Marin County, which the Carlstons find is well within "rumor distance" of Silicon Valley. The company's manufacturing and production facilities are all local. The software line is carefully planned for diversity and quality, and comes from a variety of sources, outside and in-house. In addition to the input the company receives from

on the computer's zero character, and to convey a sort of quasi-Scandinavian ambience. Are they Scandinavian? "Quasi," says Doug. The three crowns were originally devised to signify Doug, Gary and their brother Don, who wrote one of the company's first programs. Eventually the third crown was occupied, as it were, by their sister Cathy, who joined Brøderbund in 1981 and now serves as Vice President of Strategic Planning and Business Development.

Interviewed recently at their San Rafael headquarters, the brothers (Cathy was out of town) discussed the philosophy behind Brøderbund's success, the mass appeal of their products and their plans for the future.

Your product line is pretty diverse — is there any common denominator?

Doug Carlston: They're not any more diverse than a book publisher's line. We really are a publisher of products that are created all around the world and submitted to us for publication, very much as a Simon and Schuster operates in book publishing.

The common element that ties

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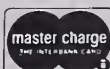
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ket. The typical IBM user uses two or three programs and that's it. It's been a dedicated machine for one particular purpose.

The average Apple II owner buys between five and seven hundred dollars' worth of software per year, every single year. The Apple market last year was 70% an aftermarket. That means that 70% of the software sold was sold to people who had not just bought a computer. For every other machine out there it's less than 50%. So it's a mature market in a different way from other markets. And that means that even as hardware sales level off and decline, that doesn't mean software sales decline, because you're creating homes that have adequate hardware to sustain a software market.

It's like creating literacy out there. Once you create literacy you can sell people books, but until you have a literate population you can't.

Well, a lot of people learn to read English, so you can write your books in English and sell a lot of them. You have a larger number of people that've learned Russian, but don't read very many books. IBM is certainly the standard, and it's there we're putting the greatest emphasis next year. But it's a come-along market, one that's taken some time to evolve, because it's been perceived as primarily a business market, and a business market is much more highly focused market than the personal market.

GC: We read someplace that the Apple and IBM software bases are identical, but the Apple software is still technologically superior. It's just slicker, getting more power out of the machine, and so on, although Apple is losing that, because more people now go back to the IBM. What that says to me is that a lot of that polish and a lot of those techniques are going to be moving more into traditional IBM markets, and to high-end personal use products.

DC: Nobody's ever going to be willing to install a program again once they've used programs that install themselves. Maybe that's the simplest explanation.

Your IBM evolved out of a market that was very, very tolerant of very obscure and complex procedures. It went through a priesthood to the ultimate user. The priesthood is rapidly eroding, because people are using these directly rather than through their MIS departments.

Most people that're using microcomputers don't have a whole lot of time to get fully educated in the relatively arcane areas. It's not their principal business; they get these things to improve their work, and it doesn't improve your work if it's taking six hours a day of your time.

The software hasn't quite caught up. If you look at the large body of software in the marketplace, it still has to be installed by a professional. Take a look at *dBase II*, the best-selling database program. Give it to

any non-programmer and ask them to do something with it within the next week. There's absolutely no possibility.

What kinds of alternatives do you offer?

DC: The alternatives are already there. They've been pretty fully implemented in markets like the Apple market. You create software that moves the boundary between the expert and the machine. It moves the zone of responsibility from the expert over to the machine. It means that you can take the person who's far less technically proficient and get the same level of performance out of human and machine, where formerly you needed a person with a much higher level of expertise.

They used to call it user-friendly. Basically you take the interface between the man and the machine, and you make the machine understand

units over there that we can't begin to compete with over here; *Lode Runner* sold more than a million units over there.

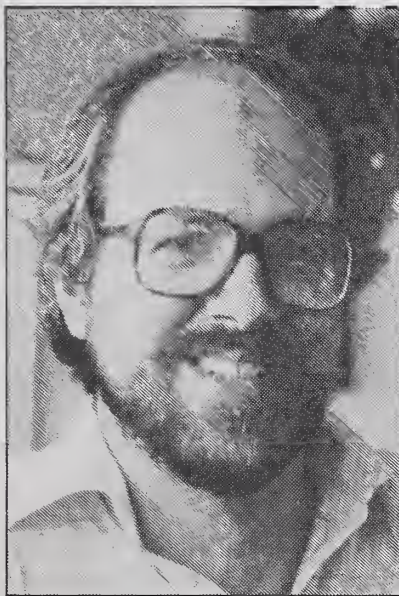
Do you have any other significant foreign markets? Europe?

DC: We do do business in Europe, and have for some time. I think Canada is our largest [foreign] market, Japan is second, Australia is third, and Europe a distant last.

They're not buying the same quantities of machines; it's a very fragmented market, and it's a cassette market. They haven't got disk drives, and most of our software is designed for disk drives and printers and things like that. It's still a very primitive market. It's changing, but it hasn't changed yet.

Do you go out looking for software developers, or do they come to you?

GC: We're very aggressive about



Gary Carlston: "Products have to show somebody's passion. They can't be created purely from a business objective — go after that market."

the man rather than the man understand the machine. You write programs that take into consideration the way human beings think.

GC: You can substitute "person" where he says "man." He's old-fashioned.

Do you foresee changes in the company as the Amiga and the Atari ST and God-knows-what-else come along?

DC: We have one advantage, I think, over other people. We've already been in a marketplace far more radical than the American one. We have to support 18 computers in Japan; we've only got five in the United States.

We've done it with a lot of help throughout and a lot of licensing in Japan; we haven't done it all ourselves. But we've at least had some exposure to a marketplace that's far more complex than the American marketplace.

It was about two years ago that we started having our products sold in Japan. It started very slowly, and about a year ago it really took off. We've had products that have sold

going out and looking for developers. We have a person whose title is "ambassador," and he speaks to 20 – 25 user groups a month, showing products and giving the pitch of "When you develop your software, contact Brøderbund, we want to be your publisher."

Every single package that goes out has a little card in it, saying, "We'd like to see your programs, anything you're developing."

DC: We have an acquisitions department that reviews every product submitted, and submissions run anywhere from five to eight a day. Every single one gets looked at, every single one gets reviewed. If we think there's potential there, even if we're rejecting a product, we'll often try to send back suggestions.

GC: An example: *Print Shop* was rejected the first time, because it would not print. It did beautiful screen graphics that you could send on a disk. We said, "If it would print hard copy..."

DC: There were a lot of other things too.

GC: Initially they [developers David Balsam and Martin Kahn] were re-

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sistant, but then they thought about it and came back and agreed to do it. I don't think they regret having done it...

DC: They brought it to us in September and told us, "This has to be out by October, in time for Christmas." It was released the following June.

You have to be persuasive to convince someone to skip a Christmas, especially when you feel like everybody is rushing to do the same product and get it out there. To tell them to slow down, get it right, because you only get one crack at it, you can't fix something that wasn't put out right the first time.

One of the things that Gary and I try to tell people is that the last 5% of a program probably translates to 50% of the sales. I think it's probably

vice for the world around you.

It was based on my childhood recollections — Gilbert chemistry sets, the kind of things you could buy on the back pages of *Boys' Life*.

I think the programmers did a fabulous job. They got a guy from the Lawrence Hall of Science to work with them to design experiments. A couple of our most creative people over in Product Development worked on designing and programming the product itself.

The suggested retail is \$59.95. For this Christmas it'll just be available for the Apple; we'll do other versions next year. We're just real excited about it.

Carmen Sandiego [*Where In The World Is Carmen Sandiego?*] is another part of the new Explorations line. It's another one we're kind of fond of, which came out of one of Gary's ideas.

GC: Once again, it's from a childhood fascination with, in this case, almanacs, which all of us share. We used to lie there and ask each other questions out of the almanac...

DC: What's the capital of Outer Mongolia?

GC: [Instantly] Ulaanbataar.

The notion was that educational software was boring and that entertainment was still pretty boring, and this was to do an adventure game where the solutions are in the almanac. You would have crimes you'd need to solve, all done with graphics and animation, where the perpetrator of the crime would leave clues behind that would require a little ingenuity to solve, for example, a piece of green silk and a drachma. You look and see which countries might have flags with green in them or use the drachma.

DC: I would've gotten it wrong — I would've gone, "What countries produce silk?"

GC: Well, that's another way of doing it.

And so it teaches people to use reference materials, but adults like it for very much the same reason they like *Trivial Pursuit* — they sit there and try to play it without the book.

There are over 16 million different scenarios, each time you boot it up, so you never play the same game twice. We wanted a game you don't get bored with. Sooner or later you'll have all the clues, and then we'll sell another clue disk.

Basically if you make the wrong decision you get lost. You realize that nobody knows the answer to your questions.

You realize you're hot on the trail when people start throwing knives at you.

Both of these products are internally generated — by Brøderbund people rather than outsiders — with the intent of saying, "This is the style and quality that we want in our Explorations line."

This line has redeeming social values; whether or not it's pedagogically correct is not relevant. We said,

"If we would've enjoyed it at age 12, and if we still enjoy it now, then it's what we want."

This brings up one of our basic tenets in publishing, which is, we publish stuff we like ourselves. We don't create a model market research.

DC: We publish for ourselves.

GC: It seems the surest indicator. Products have to show somebody's passion. They can't be created purely from a business objective — go after that market.

Probably if you look at places where we fail with products, it's probably because we're going after a market we weren't in love with.

Do you have a specific example?

GC: No, [smiles] but if you come back in a year and say, "How come that product failed?", that's the excuse I'll give.

What do you think makes your software so successful generally?

DC: I'd say the amount of editorial work that goes into each product would flabbergast most people — the number of man-years that go into a product that the author has submitted as a finished, completed work.

GC: It's often very difficult for programmers that have been published elsewhere when they come here for the first time. They say, "Elsewhere it would be done by now. They would publish it as is."

But of course, that's also the reason that allows us to attract developers who want a product to reach its full potential. They know we won't let it out the door prematurely.

DC: And they also know we add a lot to the product. It's not just "Wouldn't it be neat if you added this feature?" This is a really professional group whose focus is an editorial development of the product.

Plus a very strong and competent technical staff who works behind them, to help them with areas that the original authors may not be able to handle. They'll handle machines that the original author may not be competent to address, and basically provide the technical backup that many authors, however good, frequently need.

GC: It's a little like the attitude I heard on NPR. The new GM car factory is going in in Tennessee. There's already a car factory in Smyrna, Tennessee — it's a Nissan factory. And they were interviewing this woman who worked there; she's on the line, she has a really strong hillbilly accent — "Waal, they'll never build cars as good as we build cars, 'cause with us and the Japanese helpin' us, we build the best cars."

People are motivated more by building quality than by almost anything else. The quality standards here are imposed from below, they're not imposed from above. If we tried to push something through with bugs in it or defects in it, the people in testing — teenage kids — would come in here and say "No way." □

Gary Carlston: "If we would've enjoyed it at age 12, and if we still enjoy it now, then it's what we want."

closer to 90% of the sales. But if you don't do that last 5%, you're simply forgoing most of the marketplace, because most of the marketplace doesn't have patience with people who didn't take time to get it exactly right.

What kind of new products are you coming out with?

DC: The way the company works is that people tend to get bees in their bonnet. They wander around until they find someplace that's fertile, and they plant their idea and see what comes of it. The Science Toolkit [part of the Explorations line] is one that's been a bee in my bonnet for a long time, and it finally evolved to product size.

It's both hardware and software. It plugs into a joystick port, and it's a little box that allows you to attach experimental probes to your computer. You have a whole variety of tools — a thermometer, a bar strip recorder, a light meter, a timer — all in the software, as well as connectors that go to little photo cells and thermistors and so on. There's a series of over 100 experiments that you can perform on the world around you. You can basically turn your computer into everything from a security system for your house to something to do experiments measuring the rate of acceleration when you drop a ball; it uses the computer along with the hardware to perform all these experiments.

It also will have add-on modules that will focus on particular areas — the weather, or your body — and turn your computer into a monitoring de-

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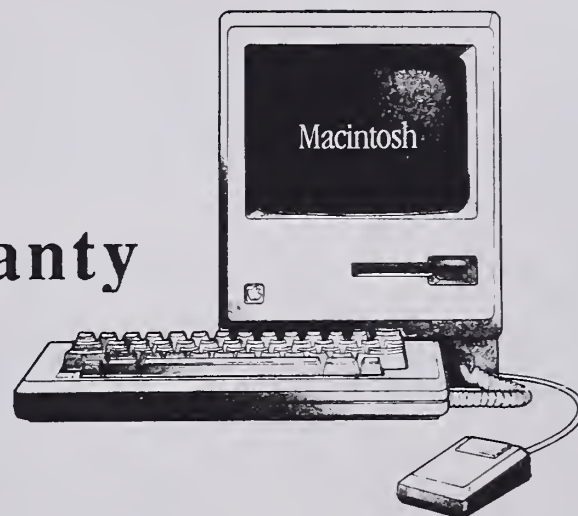
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You Can Build A PC-XT *...for half the cost!*

By Aubrey Pilgrim

You may have seen ads for IBM PCs and XT's for as little as \$1500 or so. You may have gone running down to buy one. Surprise!! You would find that there would be just a few other things that you'd have to buy in order to have an operating system. Things like controller boards, floppy disk drives, printer boards, cables, and a monitor. Even after all this, you still wouldn't be able to operate the computer until you bought the PC-DOS operating software. For a decently configured PC it could cost up to \$3000. For an XT, up to \$4500.

You can assemble a PC or PC-XT compatible for less than half of what an IBM would cost. Even if you're the biggest klutz in the world, you can still do it. If I could do it, anyone can.

I have only had a computer for about three years. I had been trying to write a book for several years. I am not the best typist in the world. I would type a page, then find that I had left something out. So I would do it over and make several typing errors. I used gallons of white correction fluid. I finally decided the only way I would ever finish the book would be with a computer.

I bought several computer books and subscribed to dozens of computer magazines in order to learn as much as I could about computers. I also visited all the computer shows. Just before closing time at one of the shows, a Morrow dealer offered a \$1900 system for \$1600. In addition, they threw in about \$2000 worth of software to go with it.

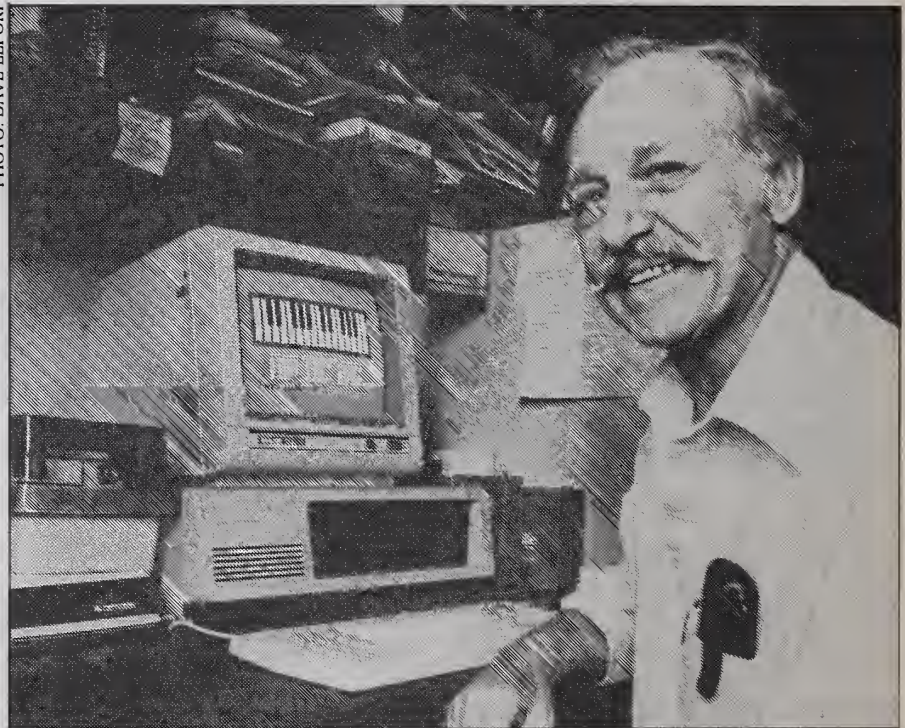
I really wanted an IBM. But an equivalent IBM was selling for about twice that much and they would not even give you the operating DOS software. So I bought the Morrow CP/M machine. At that time CP/M had not yet become a dirty word. In fact, it was the leading operating system.

I was very happy with my little Morrow. The things you can do with a word processor like WordStar is amazing. Before, it would sometimes take me hours to turn out a sheet with just a minimum of errors and type overs. With the computer, I could turn out a perfect page in just a few minutes. And it was so easy to go back and add, change or re-arrange any of it.

But my little Morrow only had two single-sided 200K floppies. It is amazing how quickly you can fill up a 200K disk. I am not the most organized person in the world. I was constantly misplacing disks and I often spent more time looking for a certain disk than I did working at my computer. I finally decided that I needed a computer with a hard disk. Besides, every time I went to a computer show I would see tons of goodies for the IBM and compatibles, but almost nothing for CP/M machines.

I still could not afford to buy an IBM. So I checked out several of the compatibles and do-it-yourself kits.

PHOTO: DAVE LEPORT



The author and his homemade XT.

At first I was quite skeptical as to the compatibility of the machines, and I was sure that I would not be able to build one myself. But I saw several demonstrations of the machines running things like Lotus 1-2-3, dBase III and other programs which convinced me that they were compatible. I talked to some people who had assembled their own, and they assured me that it was a snap.

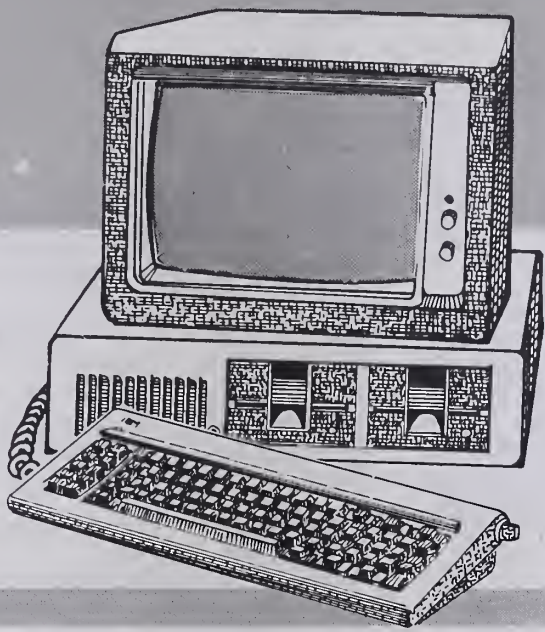
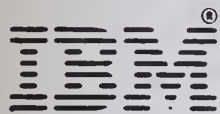
I went to a local computer show and looked over several of the kits that were on display. One of the beauties of these things is that the parts are all interchangeable with IBM and each other. It's like buying a Ford and being able to use Cadillac, Chrysler or Chevrolet parts on it. So I shopped around and bought a hinged case and mother board with 256K at one place, a 130 watt power supply and two half-height floppy disk drives with a controller board at another booth. I then bought a 25-megabyte hard disk with a controller board. I also bought some interconnect cables and a keyboard. Later I bought a Taxan 420 high resolution

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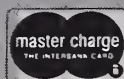
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color monitor and a Paradise multi-function board with 384K of memory.

I brought all the parts home and began to assemble them. The mother board sits on stand-offs and is attached with screws to the case. Four screws are used to attach the power supply. The floppies and the hard disk drive are attached to a bracket and bolted to the case. The power supply has cables which plug into the mother board and to the disk drives. One of my biggest problems was getting the bezel on the hard disk drive to line up properly on the front of the case. I finally used some rubber cement and glued it in place.

Within two hours I had my system up and running. I had a color monitor, two floppies, a 2-megabyte hard disk, 640K of memory and a multi-function board. My system looked exactly like an IBM PC-XT but actually had greater performance capabilities. Except that mine did not have the IBM label on the front. But mine cost less than \$2000. An equivalent IBM PC-XT would have cost between \$4500 and \$5000.

Actually it would have been possible to have built this system for even less money. Most of these boards and components are manufactured in the Orient and imported into this coun-

try. Many of the importers then assemble the components into systems. But most of them will sell you all or any part of a system that you may want. So if you have the time and the expertise, you can buy the bare motherboard or any of the other boards for quite a bit less than the assembled and tested units. The motherboard is almost identical to the IBM motherboard. It uses identical sockets, components and ICs. So you can buy the connectors and components and solder them in yourself. But there are a thousand and one ways to make small errors when doing assembly at this level. Unless you have some very sophisticated equipment, it might be almost impossible to find such errors. I would strongly suggest that you buy units that have already been assembled, tested and ready to plug in. Then if something goes wrong, you can take it back to the vendor.

Although the majority of these vendors and suppliers are very small companies, most of them will give you a 90-day warranty. If they are going to fail, most electronic components will fail within the first 100 hours or so of use. So when you buy a new piece of hardware, it is a good idea to turn it on and let it run or

burn-in for about a week.

My Morrow system had a serial RS232 printer port, but IBM has standardized on the parallel system. Because of this the majority of printers on the market are now parallel. This is one reason I bought the Paradise five function board with its serial output. But in order for my printer to work, I must use the DOS Mode command to re-direct the output. So I made it a part of my Autoexec.bat file and it is run automatically every time I turn on my machine.

My Autoexec.bat does some other very useful things. Here is a listing:

```
Mode Com1:1200,N,8,1,P
Mode LPT1:= Com1
CLSET SYSTEM
DATE
TIME
ECHO ON
PATH C:\
PROMPT $e[s$e[1;2HToday
Is $d$e[1;
40HCurrent directory =
$P$e[u$e[Om$N$g
CLS
```

This program sets my printer with the Mode Command, then displays the date and time. The Paradise board has a battery operated clock which keeps track of the time and

the date, even when the computer is turned off.

The PROMPT line above with all the funny looking symbols puts a line at the top of the screen to let you know which directory or subdirectory you are using at any time.

In order to get this into your system, at the A> or C> type COPY CON AUTOEXEC.BAT return> then type in the program above. At the end, hit F6 or Control-Z, which ends the program and saves it. From then on every time you turn your system on it will run automatically.

One of the main things that make these computers compatible with the IBM is their Basic Input/Output System (BIOS). This system is encoded on a 28 pin ROM chip. With an EPROM burner it is possible to make an exact copy of the IBM chip, but this violates the copyright laws and tends to make IBM a bit unhappy. A couple of years ago, IBM, and also Apple, sued a few companies that had developed BIOS systems that were very close to theirs. This forced the companies to re-write their systems and forced some of them into bankruptcy.

The BIOS used by the kit companies seems to be at least 99% compatible with IBM.

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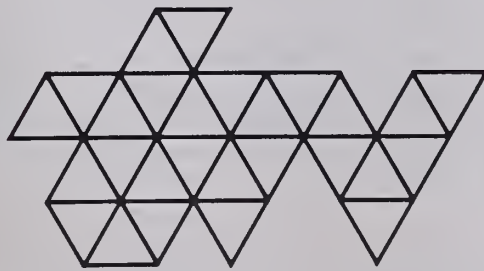
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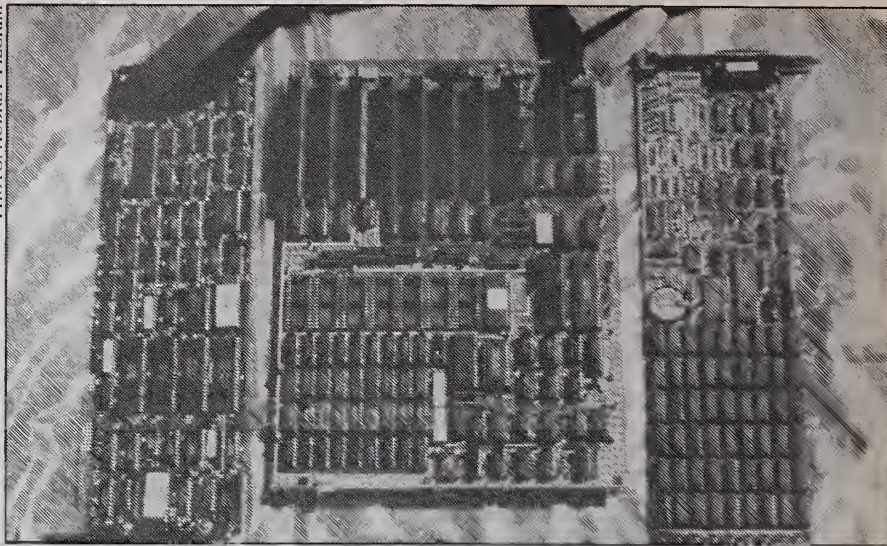
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You must have the Disk Operating Software (DOS) in order to operate your computer. It can use either the IBM PC-DOS or MS-DOS 2.0, 2.1 or 3.0. You may have a few problems with some programs if you use DOS 3.0. The DOS 3.0 is not that much better than 2.1 so I would recommend 2.1.

You can buy DOS 2.1 for about \$60.00. But I suspect that many illegal DOS copies are made by the people who buy or build these systems. Many have friends who have IBM systems, or they have access to IBMs at work.

IBM installs their version of BASIC as BASICA in ROM chips on the motherboard. But Microsoft sells GW-BASIC, equivalent to the IBM BASICA, on a disk.

You will also need a good word processor. WordStar was bundled with my Morrow. I have learned to use it and like it. It is the most popular of all the word processors. You will also need a data base program like dBase II or dBase III, and a spreadsheet like Supercalc or Lotus 1-2-3.

More than anything else, the Xerox Copy software was responsible for my decision to move up to the compatible PC-XT. I had typed my book, several articles, my tax records and a lot of other data onto disks in the Morrow CP/M format. I was locked in until I bought the XENO-COPY software. It runs on IBM and compat-

ibles and can read, copy, format and write to over one hundred different disk and computer formats. With this software I can easily copy my Morrow disks to my PC system. I have a brother-in-law who has a Kaypro and we often exchange data and disks. The program was developed by Fred Cisin of Berkeley and is distributed by Vertex Systems at 6022 W. Pico Blvd., Los Angeles, CA 90035.

These kits have made it possible for almost anyone to own a powerful and versatile computer. If you don't have a lot of money, you can look for bargains and buy a little at a time. These kits would be ideal for schools that don't have too much money to spend on their computer classes. The students could assemble them and learn while at the same time saving the school money.

These computers can also benefit small businesses, doctors, lawyers and anyone else who has a need for a good computer system.

We are including a partial list of distributors with their address and telephone number. Prices are falling like autumn leaves. Before you buy a system, you might shop around and call for the latest prices. You might even be able to haggle a bit with them.

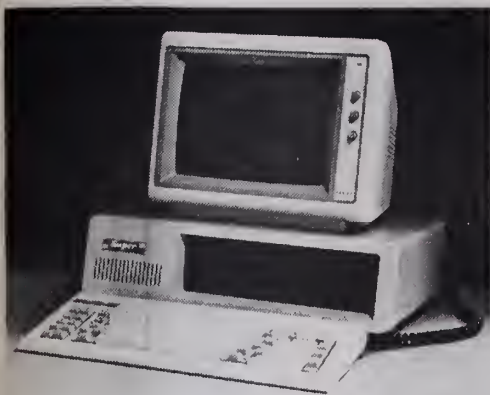
Computrade, Sabet and some of the other companies listed below are already offering an IBM PC-AT unit. You can bet that there will be many others offering this powerful computer before very long. □

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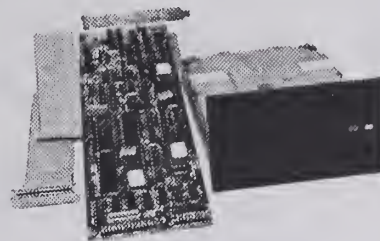
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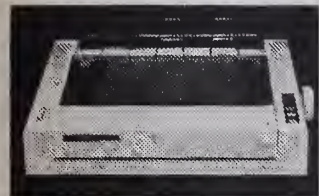
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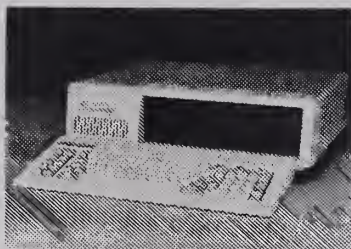
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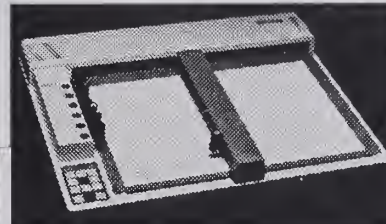
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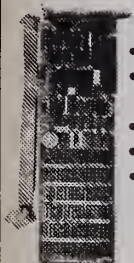
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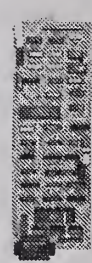


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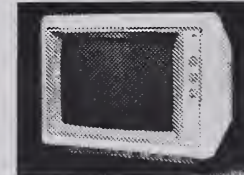
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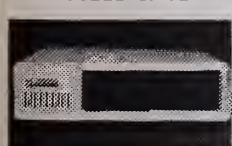
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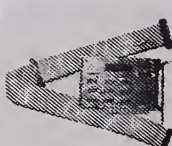
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R.I.P. Electronic Freedom (1977 - 1985)

By Brock N. Meeks

What is freedom? Freedom is the right to choose: the right to create for yourself the alternatives of choice. Without the possibility of choice and the exercise of choice a man is not a man but a member, an instrument, a thing.

— Archibald MacLeish

"Child Molesters Use Computer Network." Those headlines rocked the online community. Testimony presented to members of the Senate Subcommittee on Security and Terrorism during an oversight hearing in July confirmed the use of computer bulletin board systems (BBSs) by child molesters. Government officials testified that pedophiles used these BBSs to find the names and addresses of other pedophiles and their young victims.

Disgusting? Yes. Illegal? No, at least not yet. Should it be? Maybe.

Just The Facts Ma'am

On July 17th, Senator Paul Trible (D-VA) introduced the Computer Pornography and Child Exploitation Prevention Act of 1985 (S. 1305). The Congressional Record for that day (Vol. 131 No. 80) carries full text of the bill and states the purpose of S. 1305 in the words "Trible: S. 1305. A bill to amend title 18, United States Code, to establish criminal penalties for the transmission by computer of obscene matter, or by computer or by other means, of matter pertaining to the sexual exploitation of children and for other purposes."

The bill "is designed to deter and punish two insidious uses of computers," says Trible. "First, by pedophiles to communicate with one another and to catalog information about their victims. The second is the offering of so-called sex talk computer services similar to the dial-a-porn programs which have sprung up around the country."

In official testimony, Trible said the use of computers "to transmit offensive material is apparently not proscribed by existing federal law."

Bingo. An Information Age loophole. Enter Uncle Sam wearing the hat of the Federal Communications Commission.

According to Jack Smith, general counsel to the FCC, obscene transmissions by computer are not prohibited. In addition, transmissions that are not in themselves obscene, such as the names and addresses of child abuse victims, are also not illegal. Since the material is sent over the phone lines, however, he did suggest that this type of activity would be "an appropriate subject" for

Brock is a San Diego based freelance writer. He writes often about telecommunications, law and politics.

**If S. 1305 passes,
you could see your friendly
neighborhood sysop turn into
(in theory) an agent of
the Federal government,
an electronic cop that must
report potentially "offensive"
material you post, public
or private.**

federal regulation.

According to United Press International, Deputy Assistant Attorney General Victoria Toensing acknowledges that passage of S. 1305 would help in stemming the flow of pornographic material by computer. Toensing, however, warns that legislation to prohibit the sending of descriptive information about children would raise "serious constitutional problems."

Pandora's Box

There is no doubt that S. 1305 would leave pedophiles little room to trade or communicate electronically regarding their activities; but the bill does not stop there. The language of S. 1305 leaves a large grey area, open to legal interpretation, that could have a negative effect on the freedoms and privacy of electronic communications.

Here is an excerpt from the second section of the bill: "Whoever knowingly owns, offers, provides or operates any computer program or service having reasonable cause to believe that the computer program or computer service is being used to transmit in interstate or foreign commerce any matter the carriage of which is herein made unlawful . . ." is guilty of a federal offense.

What's that sticking in your craw? The phrase, "having reasonable cause to believe" making things tough to swallow? You're in good company.

Paul Bernstein, a Chicago attorney well respected for his defense of civil liberties in computer communications, shares the same opinion. Bernstein sees this clause as placing the burden for detecting unlawful materials on systems operators. The bill's language does not appear to distinguish between public and private communications within systems.

Just where does this lead? It's possible that with FCC regulation, all your comments via an electronic message system—private or commercial (such as The Source or CompuServe)—will be subject to some level of monitoring (Mr. Orwell, are you listening?)

Privacy, It's A Right. Right?

I'm all for the stopping of activities (electronic or otherwise) that promote the merciless exploitation of children, but at the expense of my electronic privacy? Give the FCC legislative rein and they will soon saddle the online community with bureaucratic regulation and red tape.

If the Trible bill passes, you could see your friendly neighborhood sysop turn into (in theory) an agent of the Federal government, an electronic cop that must report potentially "offensive" material you post: public or private!

Will you one day have to pass a test to become a sysop? Will all BBSs have to be registered, like guns? It's time to take on the mantle of "Modem Minutemen" and help protect our "global village."

Keep A Cursor Lit

If you're involved with telecommunications (that's a 20 to 1 shot considering you're reading this column) then you are well aware of the potential of this medium. You can use it (as a powerful organizing and lobbying tool) or lose it (by sitting on an apathetic cursor).

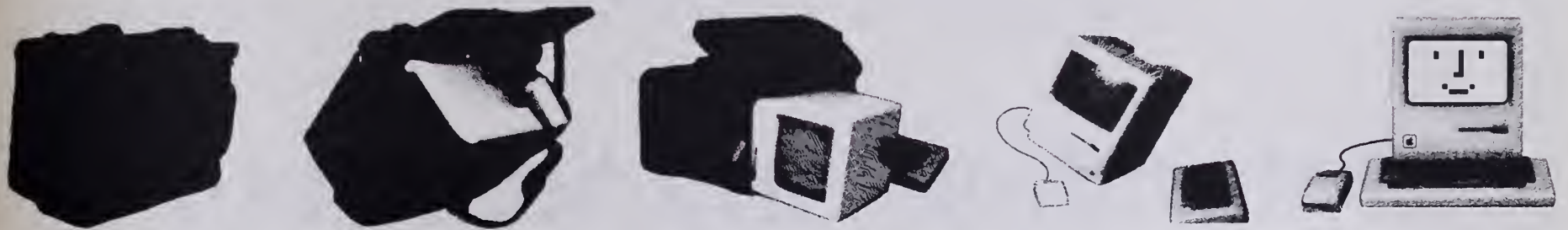
Where can you learn more? Open a buffer and stuff the following on a disk somewhere (preferably not the one that routinely rests under the coffee mug):

- The W.E.L.L. — a computer conferencing system. Data line: (415) 332-6106. Carries a teleconference on S. 1305.
- House Bill Status Office (Federal) — if a hearing has been held on a topic (like S. 1305) it's likely top experts have been called on to give their opinions. In addition, all major information sources are usually identified. Call (voice) (202) 225-8646 and the faithful civil servants will provide you with all the pertinent information regarding the topic.
- The Source — a commercial information utility, carries "Telelaw," a teleconference on the subject. A Source membership is required to participate.

The full legal implications of S. 1305 are not known. I suspect it will take many long hours, both online and on that antique telecommunications device—the phone—before the verdict is returned.

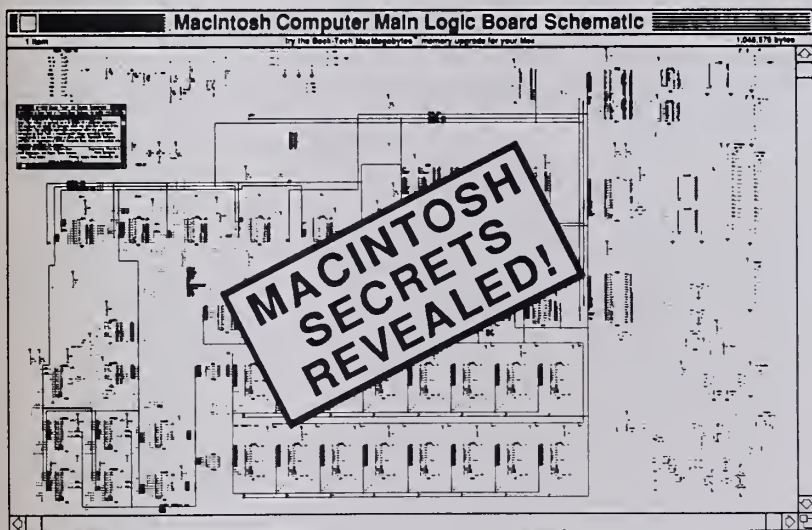
I think Thomas Paine (using quill and ink) summarized the issue 200 years ago: "Those who expect to reap the blessings of freedom must undergo the fatigue of supporting it." □

BECK-TECH lets the MAC out of the BAG !



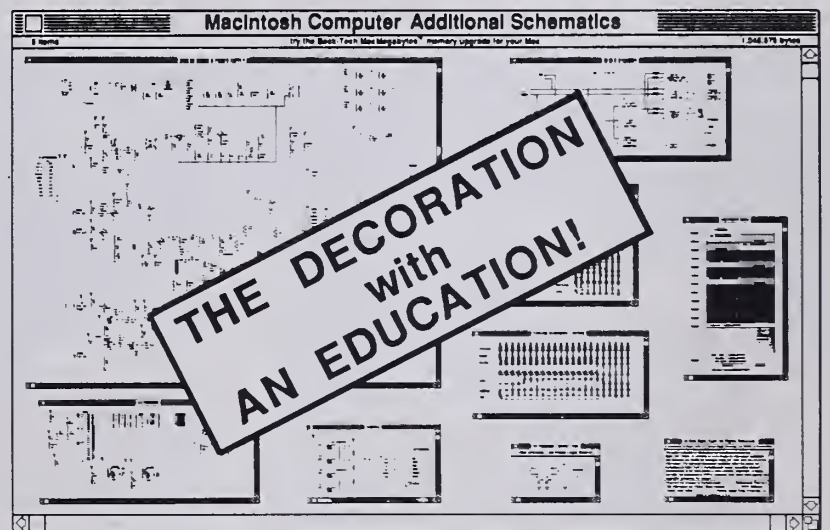
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Saturation And Shakeout

By L.K. Engelhart

A saturated market is one which will accept no more of a given product at the existing price. We all recognize the variables here: demand, supply and price. Most analysts are claiming that either there is a dwindling demand for small computers or that the prices are too high. Never having been one to follow the crowd, I would like to suggest that the problem here is that there is no supply. That will seem ludicrous to anyone who's been wading through advertising for computer products recently, but give me a chance to explain.

The market for small computers is not saturated. I know personally a good number of individuals and business owners who either have no computer or who are dissatisfied with what they have. These people believe they need computers, yet they are not buying. Now I ask you, does that sound like a saturated market?

An awful lot of money is being spent trying to get us to buy small computers. It seems like much of the cornucopia of venture capital is poured into high-tech, computer related products. Fortunes have been made in this industry and great opportunities are being forecast daily. So, you say, how do you explain what others are calling saturation and what is obviously a shakeout among small computer manufacturers?

The Computer Craze

In no more than four or five years, the public's feeling about computers has changed from mystification and paranoia to euphoria and uncritical optimism. As a professional in the industry, I was at first pleased to see this growing acceptance of a tool whose capabilities I believed in very much. Then I began to notice a strange glitter in the eyes of these newly initiated disciples.

A recent article in the *Wall Street Journal* gives several examples of ordinary people who believe that everyone will inevitably come to use computers, but who do not seem to know what we will be using them for. These people are uncomfortable with the idea that, whatever it is that computers do, somehow they are the key to the future, and anyone without access to them will be locked out. What is most significant about these people is that their beliefs about the capabilities of computers seem to conflict with what they know about them from personal experience.

This will sound like heresy, but the widespread shared belief in the accession of the computer to such a position of power has charac-

teristics similar to other popular delusions which masses of people have shared over the ages. Although few will admit it, our economy is not in such hot shape recently. Many people who would otherwise have been out of work have sought refuge in "high-tech." Even large corporations which would otherwise have been out of business have sought refuge in "high-tech." We might even say that our entire economy would be suffering from economic deprivation had we not found salvation in "high-tech." Many individuals, corporations and industries have learned the song by heart, have committed themselves to the computer craze, and have enough at stake in it to protect it and promote it beyond reason.

Galloping Venture Capitalism

There is a significantly large group of intelligent, well established business people who want to believe that, by using computers, it is possible to "push a button" and achieve awesome gains in productivity. It actually adds to the credibility of this potential that these business people are ignorant of exactly how it is done. That, of course, is why we have to hire all these expensive "computer people."

Their weakness for computers has made this group ripe for exploitation by venture capitalists. Venture capitalists are interested in money. Making a 100% profit on their investment every six months is the kind of venture that interests them. This kind of profit is not generated by a rational market. To make this kind of money you have to sell a great volume of something very quickly to a lot of people who don't know what they are buying, and then be able to stay out of jail when they find out what they got. Amazingly enough, there have been a great number of successful ventures of this type in the computer industry.

Solutions Chasing Problems

Product development is popularly considered a process of "thinking up" new products. Our typical entrepreneur discovers a product that can be mass produced, gets it into production and then sells out to a large corporation. All you have to do is be creative enough, and you will find this dream product which the marketplace will snap up by the millions.

I'm concerned that developers of software for small computers seem to have adopted this stra-

tegy, because professional designers of "real" information systems have learned the hard way that applications have to be designed with the total involvement of the eventual user. An application which is "dreamed up" may be useful to its designer, but it has a very small chance of meeting the needs of the marketplace.

Take a look at the small computer software products that have attained positions of respect in the marketplace, and you will find they are mostly general purpose application development environments and not applications at all. Moreover, each version which better meets the needs of the user becomes the leader. The user is clearly in charge.

The supply side product development strategy also says you can create demand by packaging and displaying your product properly. I suggest that the money spent by hardware and software producers on colorful advertising and hype for business products is wasted. I know it isn't very exciting, but the only thing that sells these products to business is observed utility and potential for increased productivity.

Saturation And Shakeout

As a professional in the computer industry, and one who has a high regard for the potential of computers in business, I have occasionally been accused of having irrational expectations for computers. I want to tell you, we computer professionals are no longer the ones with the irrational expectations. Somebody is building a house of cards here, founded on the notion that computers and information are "the future" and willing to take a card from anyone who has "dreamed up" a trick to make it work. Tricks like "biological computers," "artificial intelligence," "expert systems" and "supercomputers."

Our only hope is that not everyone will buy into this delusion. Indications are that they have not. As a matter of fact, people have largely stopped buying small computers and software products. They have found through their own experience that these products are not what they need, and they are disillusioned with the producers and the promises they have made.

The market is not saturated, but there will certainly be a shakeout. The business buyer is considerably more sophisticated now and becoming more knowledgeable every day about how to put the right products to use. Now all we have to do is start producing them. □

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#111

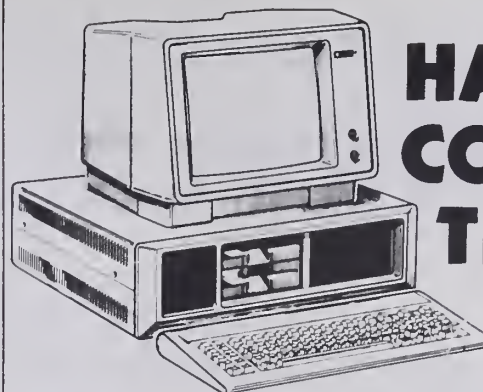
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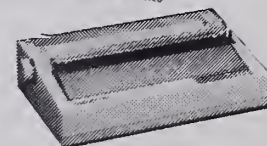
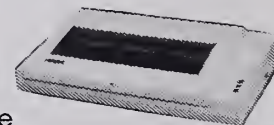
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Spreadsheet Mania

By Barbara Leone

I'm beginning to feel a bit soggy from the flood of spreadsheets hitting the market for Macintosh. It seems the software manufacturers are always looking for some new angle that is going to bring in megabucks. When Macintosh was first released it was Databases. Relational databases, integratable databases, graphical databases, all offering some questionable greatness or panacea for our database ills. The consumer was so confused by it all that many ended up using Macwrite or Multiplan to store data because the choices were far too staggering to tangle with.

Now it's spreadsheets. Where to turn; do we buy Jazz to have it all or Excel for power beyond anything ever known by common man or Mac user? But then what about Quartet or the old standby Multiplan? Or, is Crunch the right choice? In case you haven't heard of them, these are the most popular spreadsheets being marketed very heavily these days.

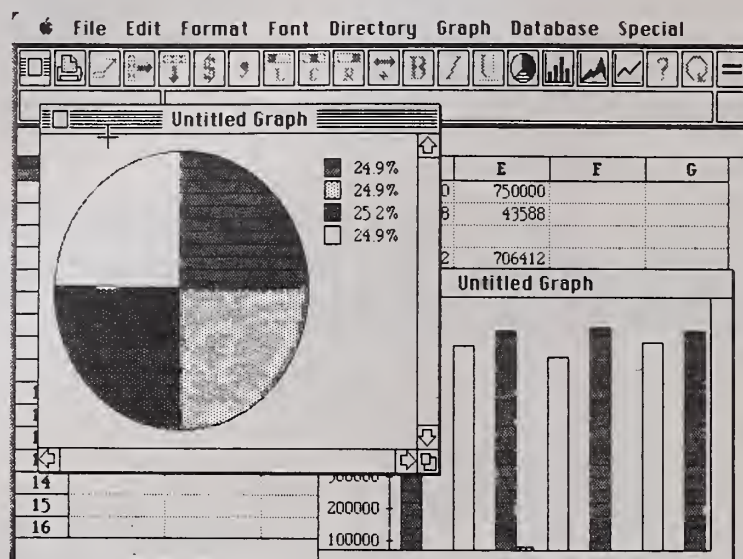
I have come to the conclusion that all of these products have value in their own unique way. That is, one is not greater or better than the other, as the marketing hype would have you believe.

If you've been keeping up with my monthly articles you will know that last month I sang the praises of Excel and the month before I reviewed Jazz. I want to take a different approach in describing Crunch. Crunch, developed by Paladin Software Corp. in San Jose, is a spreadsheet that combines presentation graphics with a database and a unique notetaking feature that is somewhat like a mini-wordprocessor. Crunch, like the others, has value in its design. But, then how do you decide which is best for you?

It seems to me that it is necessary first to evaluate your needs. First of all, do you even do anything that requires a spreadsheet? A great many of my clients bought Multiplan with their Macintoshes and have never even opened the box. They really did not need a spreadsheet, since no amount of number crunching was required in their jobs. However, when the Macintosh was first released (some dealers are still doing this) Multiplan was practically an automatic part of the sale. The key thing to keep in mind when evaluating your situation is, are you in need of a better way of doing calculations for such things as financial planning, budgeting, or just managing complex calculations? If so, you probably should look into using a spreadsheet for these tasks.

The next question you should ask yourself is how complex are these so-called complex calculations you need to manage? The spreadsheets being developed for Macintosh vary in their

Barbara Leone owns and operates Microsource Consulting Services in Orinda, California. She works with all sizes of business training and consulting on the Macintosh and IBM personal computers. For more information call: (415) 254-4999.



Crunch is a spreadsheet that combines presentation graphics with a database and a note-taking feature, somewhat like a mini-word processor. It has an icon bar across the top of the screen, which adds to its ease of use by eliminating the need to go to menus for printing or creating a graph.

abilities to analyze large and complex groups of numbers and formulas. In other words, some of these spreadsheets may have far more than you will ever use, and others not enough. I'm going to attempt to sort through and simplify the various levels of complexity.

Crunch offers ease of use and many number-crunching features that compare well with the other spreadsheets mentioned. It is lacking, however, in the area of performance. Scrolling is slow, and it lags a little when accessing the menus. This may be a problem only in the first release, and you may want to wait if you're considering this one. Crunch has an icon bar across the top of the screen, which adds to its ease of use. Instead of having to go to the menu for things like printing or creating a graph, the icons provide quick access to these commands. The graphing capability is very good, but is not as extensive as Jazz or Excel. If presentation graphics are a priority for you, Excel or Jazz may be a better choice. Crunch has something called Macros: the ability to create your own reusable formulas. The database is very straightforward. Its sorting and query capabilities are very fast and effective if you need this sort of thing. The documentation is outstanding, as is the program, for its particular level.

So how do you decide which one is for you? I would evaluate them according to their levels of sophistication. Level 1 being the most sophisticated, Level 2 having sophisticated capabilities, but not to the same extent as Level 1. Level 3 performs a medium range of complex tasks, and Level 4 performs medium to low range calculations, does not have macro capability and should be used for less complicated activities.

One way to define how complicated your spreadsheet applications are would be to examine the features that you consider to be the highest priority. That is in spreadsheet size, Jazz has 8192 x 256 (rows x columns), Crunch has 9999 x 250 and Excel has 16,384 x 256. Another way to judge the level of sophistication is the spreadsheet's predefined mathematical functions. Jazz has 96, Crunch has 74 and Excel has 84. Then, does the spreadsheet have linking capability? That is, can you create spreadsheets associated with one another and have the two update simultaneously where defined? Jazz cannot do

this, Crunch and Excel can. In the interest of user-friendliness, does the program have an on-screen Help facility? Jazz does not, Crunch and Excel do.

Do you need to share data with another computer? That is, do you need to send files back and forth via modem? If so, your spreadsheet program should have the built-in ability to do so. Crunch does not do this, but Jazz and Excel will. Their methods vary, and if this is an important feature in your decision you should research the transfer methods to make sure they coincide with your needs.

Do you need integration with other programs? Jazz has Graphics, Database, Word Processing, and Communications in addition to the spreadsheet, and data are interchangeable between each. If you need all that, in addition to your spreadsheet, the Jazz spreadsheet is very good, and I would put it in the Level 2 category since it, as yet, does not have macro capability.

Crunch with its graphics, database and wordprocessing features is in the level 3 range with its spreadsheet. It does not have the high performance capabilities that are found in Excel and Jazz. Excel is the only spreadsheet of all mentioned that deserves the Level 1 rating. Quartet deserves a level down from Crunch where its spreadsheet is concerned, and Multiplan would sit on the last level. Not to sell Multiplan short — it is still a very good spreadsheet, for simple applications. However, it has become the least powerful of all the above.

Keep in mind that this evaluation may be an oversimplification for more complex spreadsheet applications, and if you are still unclear as to how to make a decision about your spreadsheet needs, it would be wise to seek the advice of a qualified consultant or your company's computer expert.

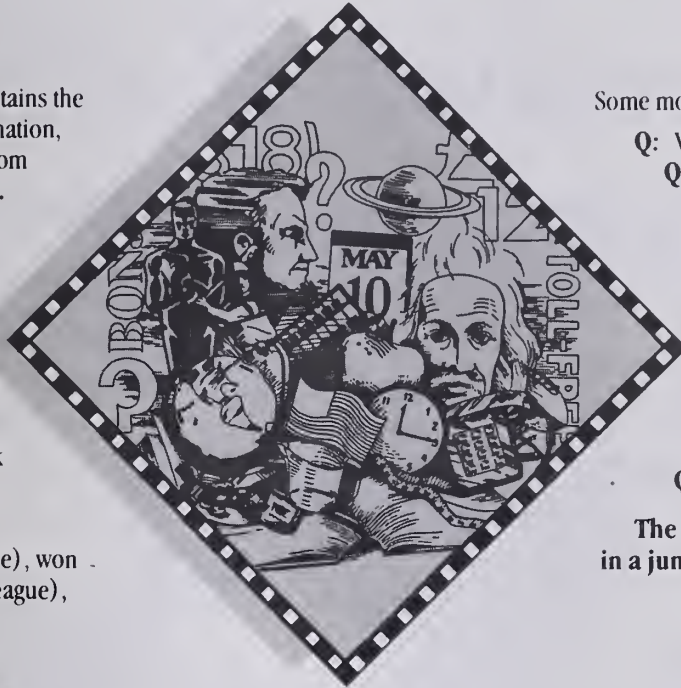
These spreadsheets cannot provide a generic solution for all users. This is why it is important to evaluate your needs first, then look at the individual features offered by these programs. It can be very easy to over-purchase a product of this type. Don't get caught up in the marketing hype or the enthusiasm of a friend or user-group that is head-over-heels in love with some product they are using. It may be that it answers their needs, but will be way beyond, or well beneath yours. Buyer beware!

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COMPUTERIA

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Developments On The Commodore Front

By Matthew Leeds

There's a lot of excitement this month for Commodore fans. The 128 has finally made it to the store shelves, and the Amiga will soon be available. In some ways it's an embarrassment of wealth for Commodore, but they need to move a lot of merchandise to make up for the \$80 million writeoff they took at the end of August. I for one hope that things turn around for them, and I think the Amiga will be the machine to take to the bank. With three strong machines out, Commodore has offerings for every segment of the market. There are indications that they may release the IBM clones they market in Europe sometime this year into the US marketplace. Not a good idea in my estimation, as that niche is saturated, and a mature market as well. They would do much better to introduce the Unix Commodore 900. This multi-user 8-MHz Z8000 machine has 1024 x 800 resolution, standard 512K RAM, 1.2-Meg floppy disk and 20-Meg hard disk built in, mouse and keyboard, and will have a base price around \$3,000.00. That's a business machine.

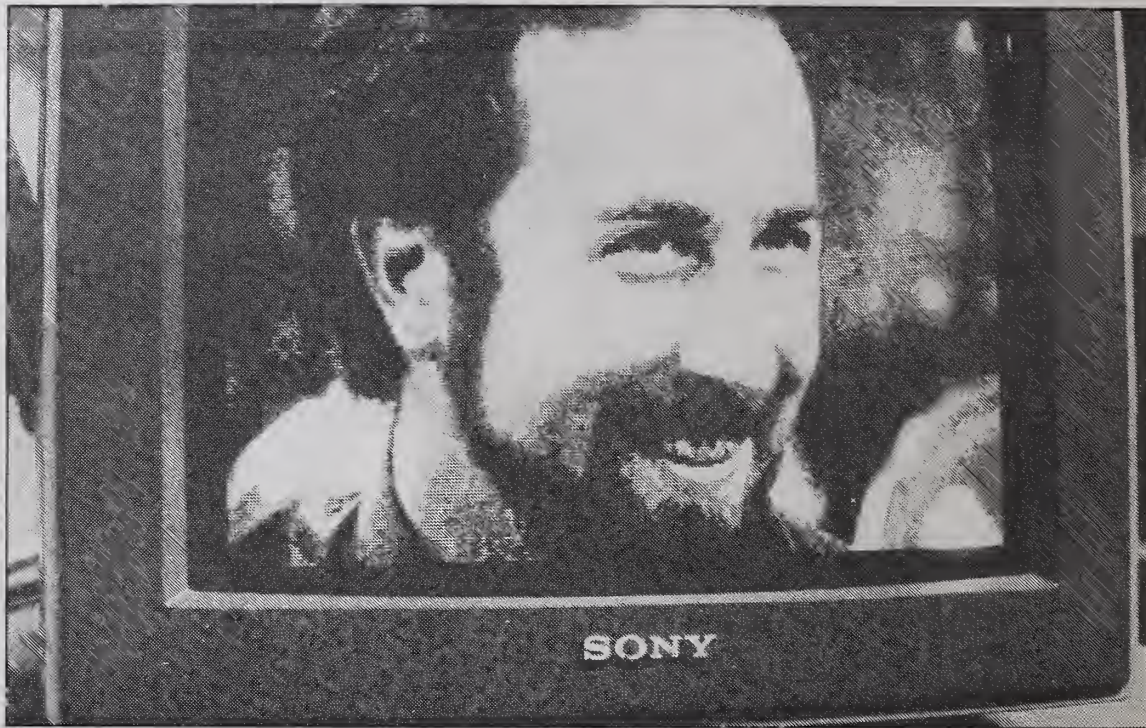
Commodore has not forgotten the C64. They're interested in producing a hard disk for the C64, but aren't sure if there is sufficient interest to warrant the development and production costs. There are two companies currently marketing hard disks for the C64, and both systems are around \$1500.00. I called Commodore for comment, and they said that they have not built it yet, and are just polling public interest. They said that if they get a sufficient response, they will market it.

How many of you would buy a 10-Meg hard disk for \$600.00??? What features would you like to see in one? Send your letters to: Mr. Marshall Smith, Commodore Business Machines, 1200 Wilson Drive, West Chester, PA 19380.

For those of you interested in telecommunications for the C64, I suggest you check out Comm-Net. This is a network, based in Colorado, that has a 24 board, all-Commodore system up and running. There are over 9000 programs in the download sections. They offer limited access to the general public, and for an annual fee of \$50.00 allow full access. There are no additional on-line charges. This is a novel idea, and I am curious to see if the Commodore community will support it. Drop me a line if you've logged on to the board and tell me what you think.

Nanosec has introduced a new compiler for the C64 with some great features. It's a true compiler, generating machine code, not P-code. It allows for chaining of BASIC and other program files, assembles from disk for larger program files, and is file compatible with the PAL assem-

Matthew Leeds is a writer/photographer specializing in high technology. He has been involved with Commodore computers since 1983, and co-produced the Commodore Show in San Francisco.



Matthew Leeds, as digitized by the Amiga Eye and photographed under arduous conditions by Mary Eisenhart

bler. You can combine BASIC, machine code, and assembled files during compiling, as well as reserved memory locations. This looks like a very powerful package.

Look for several great new releases from Brøderbund Software in the next few weeks. The Print Shop Companion is a newsletter layout and production enhancement to the bestselling Print Shop program. *What Color Is Your Parachute*, from the book of the same name, is a first in the computer software world. Should be a great aid to all the folks down in Silicon Valley who've been laid off lately. Brøderbund will also be releasing a financial package rumored to be the next step up from spreadsheets. Look for it.

The delays in the retail release of the 128 were due to problems with the FCC. In July the FCC raided Seequa Computer Corp. and seized a truckload of computers alleged to be in violation of FCC regulations. The FCC tests computers for radio frequency interference (RFI) emissions. High levels can interfere with police and fire department radios or airline communications. Commodore has had a history of problems with RFI in their computers. The early C64s were notorious for interfering with TV's. The ill-fated Plus 4's had redesigned joystick ports to reduce RFI. One source said that Commodore had to retrofit shielding on every 128 that had been produced, and that fact accounted for the delay in shipping.

Last month I got to spend a day playing with the Amiga Eye. This is a video digitizer for the Amiga. The one I was lucky enough to get access to was still in prototype; however, it knocked my socks off. It digitizes in REAL TIME. I watched myself on screen, moving and talking, digitized in full color. Be certain that this will blow all

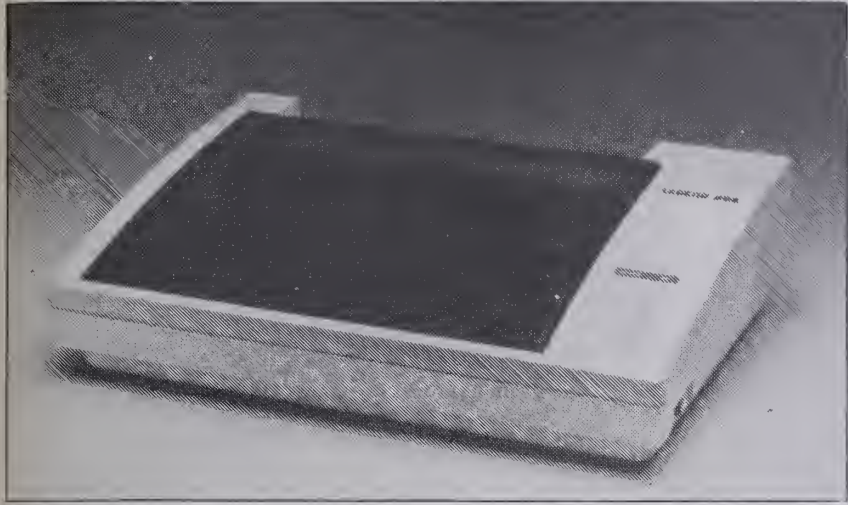
other digitizing systems in its price range out of the water. Estimated pricing (remember estimated) is under \$300.00, with availability by Christmas. I know what I want under the tree.

I recently spoke with Steve Jasik, of MacNosy fame. He is considering porting MacNosy over to the Amiga. For those of you who are not familiar with MacNosy, I'll explain. Apple put the operating system for the Macintosh in ROM and declined to release information on how it worked to developers, who felt an understandable need for detailed data on the inner working of the Mac for software and hardware design. Jasik's program gave programmers a tool for disassembling the code in those ROM's. Commodore has stated in public that they will publish all the information developers will need; however, I doubt that they will release commented source code for the operating system. Seems like Steve might have tapped a market. He thinks that he will have AmigaNosy ready around November, with a price around \$100.

For more information on products mentioned above contact:

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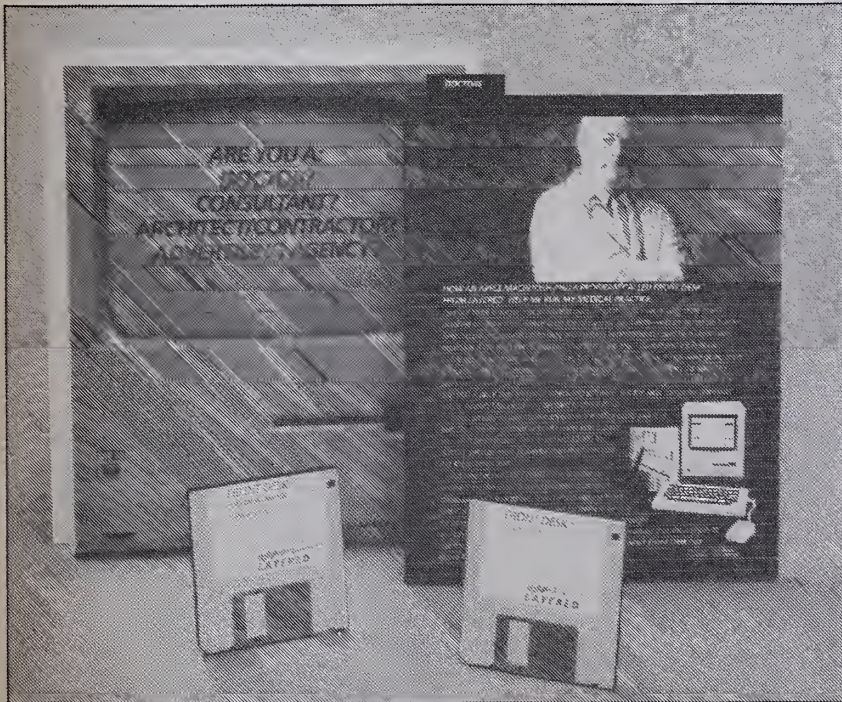


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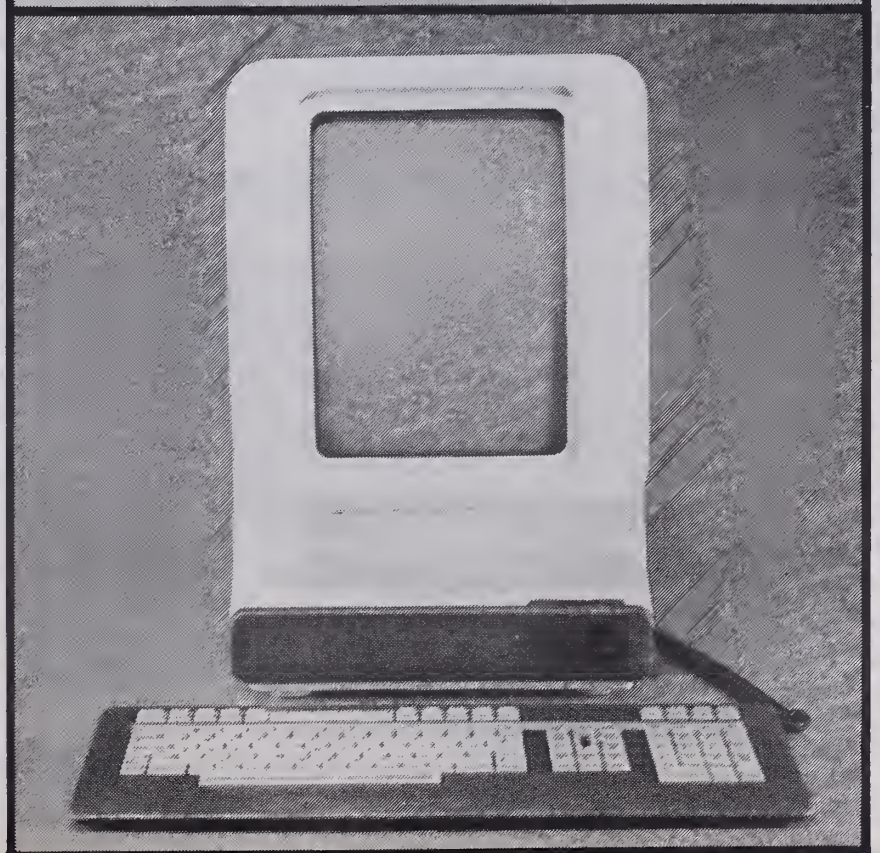
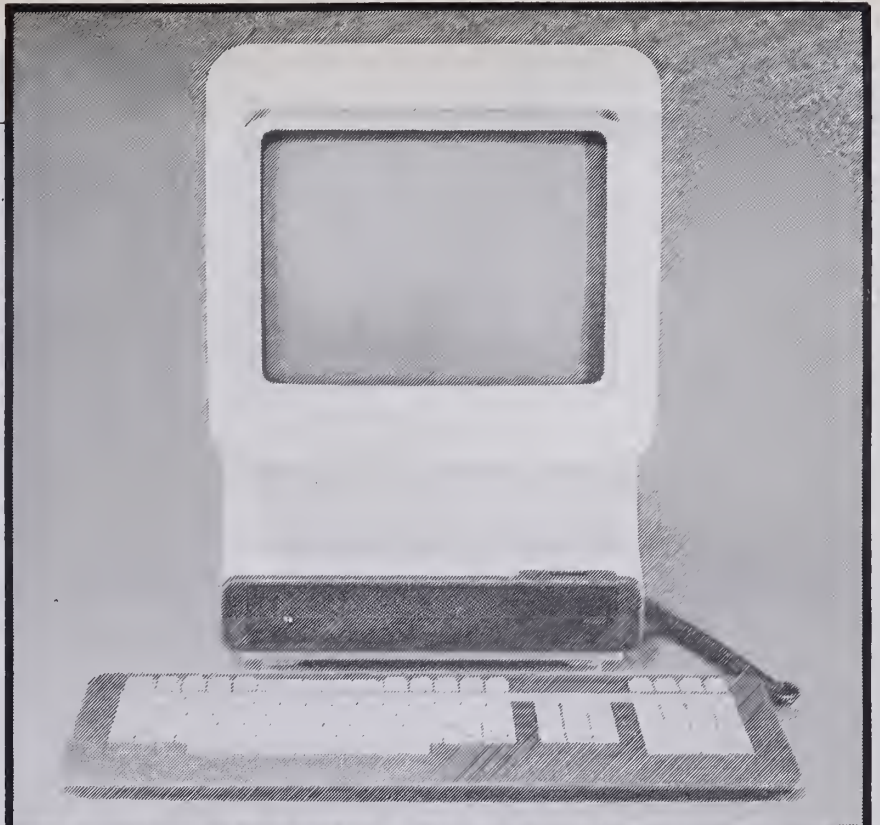
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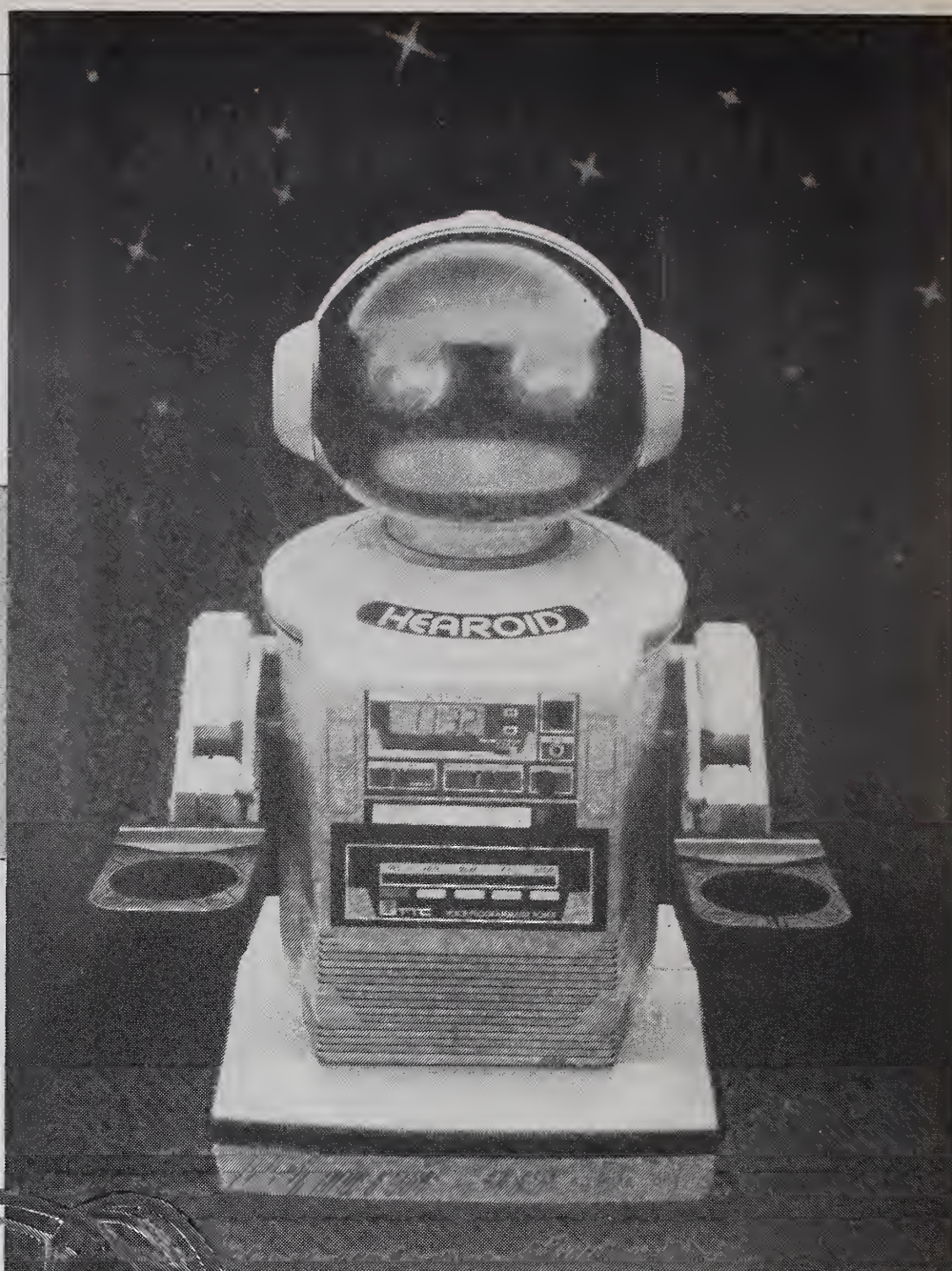
Front Desk from Layered Technologies is a multiple-resource scheduling system for the Macintosh. It allows the user to schedule up to fifteen different people, places or things while simultaneously performing time accounting — e.g. how a company's personnel are spending their workday, how much income they're generating, and what it's costing them to do it. Daily, weekly and monthly options are included. Layered Inc., 85 Merrimac St., Boston, MA 02114, (617) 423-9041.



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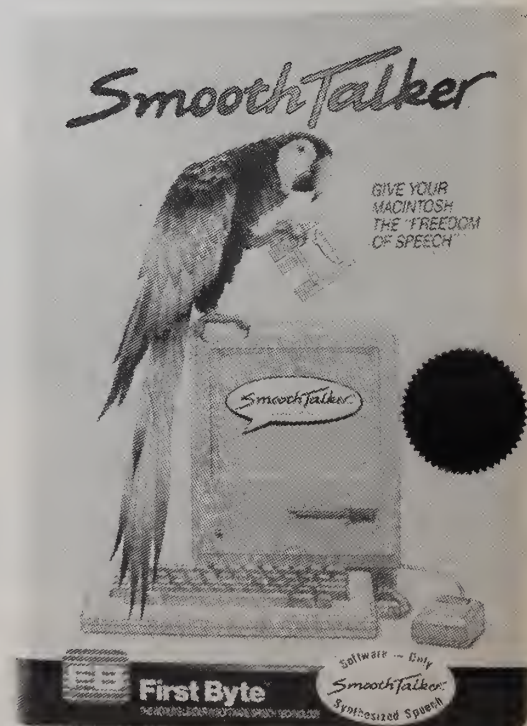


Link For Commodore Peripherals

E-Link, from Progressive Peripherals and Software, is a Commodore serial to IEEE interface, designed for compatibility with Commodore IEEE peripherals and transparent to the C-64. It uses none of the C-64's internal memory, has an independent power supply and is microprocessor controlled. The user needs only one E-Link, regardless of the number of IEEE peripherals in use. Progressive Peripherals and Software, 2186 South Holly, Suite #2, Denver, CO 80222, (303) 759-5713.

Smooth Talker 2.0: New Voice, Lower Price

The latest version of First Byte's speech synthesis software for the Mac includes the long-promised female voice option, interchangeable with the male voice with a click of the mouse. Other enhancements include the ability to use the software with Microsoft BASIC and other programming languages, and a reduced price from \$149.95 to \$99.95. First Byte, Inc., 2845 Temple Ave., Long Beach, CA 90806, (213) 595-7006.



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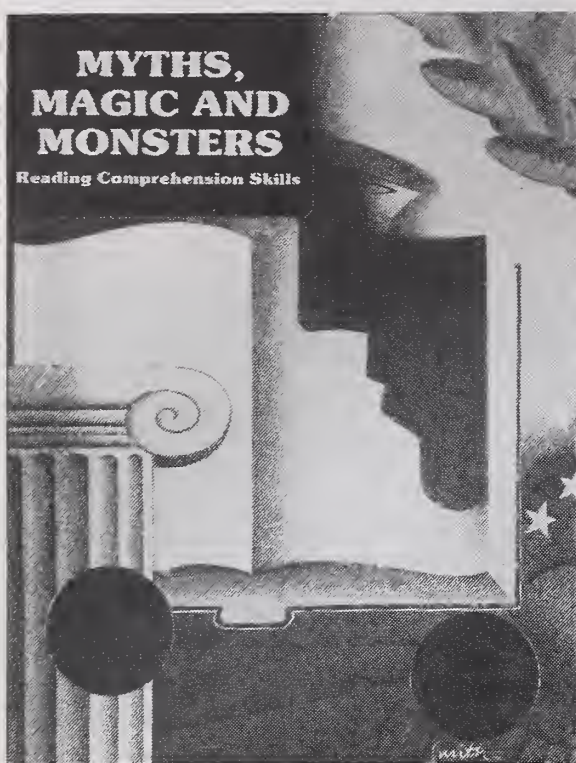
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Myths, Magic And Monsters teaches reading comprehension with tales from ancient times.

Myths, Magic And Monsters

Published by: Learning Dimensions

For: AppleII with 48K, IBM PC with 128K, IBM PCjr, Commodore 64

Reviewed by: Kathy York

How to get kids to practice basic skills and to enjoy the challenge at the same time is the reading teacher's dilemma. *Myths, Magic And Monsters* is a computerized reading program that can help motivate even the most reluctant reader. Students can have fun reading short selections and answering questions about fascinating creatures, characters, and events in mythology while improving basic reading and computer skills.

The program is recommended for middle school students who already read at about the fifth grade level, and for remedial junior high students who need additional practice in fundamental reading skills. *Myths, Magic And Monsters* provides exercises in seven major comprehension skills: recalling details and facts, identifying the speaker, sentence sequencing, using the context, interpreting figurative language, identifying the main idea and explaining cause and effect.

Parents and teachers will find this program particularly attractive because it requires little or no direct parent/teacher supervision, provides immediate feedback to the student concerning his success, provides a means for the pupil to operate at his own rate of learning, and provides a testing mode for pre- or post-testing. All directions are clear and easy to read. Also, students who need additional help with a question can press "H" for help, and an explanation of the process for arriving at the correct answer will appear on the screen.

One limitation of the program is that many of the mythological names of places and characters will be too difficult for students reading at a fifth grade level to pronounce without help. Parents and teachers who are unable to go to the computer to assist students with vocabulary can prepare a list of these troublesome words to review before students begin reading the selections.

Myths, Magic And Monsters contains exercises

that provide good, solid practice in basic reading comprehension skills. Why not just plunk the child down at his desk or on the family room sofa with a workbook that drills these same skills? Anyone who has ever seen kids and computers together knows the answer. Computers motivate, excite and challenge. Parents and educators who wish to cajole youngsters into practicing basic skills should take advantage of programs such as *Myths, Magic And Monsters*.

Big Bird's Special Delivery

Published by: CBS Software and the Children's Computer Workshop

For: IBM PC, PCjr, Atari and Commodore

Price: \$39.95

Reviewed by: Doug Pencille

The pre-school kids will really be able to relate to this program; it starts out just like Sesame Street, as Big Bird appears on screen, ready to deliver the morning mail. With the help of the child and Little Bird they must put the correct objects in the right places. The objects relate to the pictures on the



Big Bird's Special Delivery helps toddlers match objects.

screen. The child uses only three keys to move the objects around to the proper place. If the child has all of the objects in the correct places, the screen lights up; if not, the mistakes are pointed out.

Big Bird will provide a child with hours of fun and learning object classification skills. The use of graphics and slight animation keeps children's attention, while the familiar Muppet characters provide a comfortable setting.

BOOKS

Back To BASIC

Published by: Addison-Wesley (1985)

By: John G. Kemeny and Thomas E. Kurtz

Reviewed by: Mike Markowitz

Off in the woods of New Hampshire, Dartmouth College is a small, elite Ivy League university. In 1963 it launched a minor revolution when it decided that all of its students would become computer-literate. This led to the creation of a new

language, the Beginner's All-purpose Symbolic Instruction Code (BASIC). *Back To BASIC* is a new book by the two professors who developed what became the most widely used computer language in the world. Kemeny and Kurtz hope that their newly launched "True BASIC" will rescue this much-abused tool from the corruption it has fallen into during the past two decades.

To any reader who learned BASIC as a keyboard mother tongue, this book will be fascinating. To any teacher who uses BASIC with students, it should be required professional reading. Kemeny and Kurtz explain the key ideas that shaped their design:

- BASIC should be an easy-to-learn general-purpose language;
- It should be expandable, with advanced features for experts;
- It should have clear, "friendly" error messages;
- It should run fast with small programs;
- It should "shield the user from the operating system."

Through many versions and revisions, the original Dartmouth BASIC has followed these principles. It has always been a "compiled" language, running on large time-sharing systems. In contrast, the corrupt versions of "Street BASIC" that run on most personal computers are "interpreted" languages. This is a crucial distinction. A compiler is a utility that translates the user's complete program into machine language before it is executed. An interpreter does the same job of translation, but on only one statement at a time. A compiler permits programs to run much faster, and it can diagnose errors before the program is executed. Early personal computers were short on memory, and their builders were often short on time and money. Interpreters are easier to code than compilers. Limited memory forced programmers to create tiny versions of BASIC that could be packed into as little as 4K of RAM. Limited memory also led to many bad programming habits, such as the lack of documentation embedded in programs, and the cramming of many statements into one line. "The ugly compromises became 'features' of the language," complain the authors.

As incompatible families of personal computers developed, incompatible "dialects" of BASIC emerged, with awkward, hardware-dependent features. It required major effort to convert programs written for Apple BASIC into Atari or IBM BASIC, for example. The great god of "upward compatibility" demanded that bad design choices made early were never corrected later, because customers came to depend on them.

Kemeny and Kurtz look towards a future when fast, powerful personal computers will make it possible to throw "Street BASIC" on the garbage heap. "We are greatly concerned," they write, "that a generation of students is growing up learning Street BASIC, an illiterate dialect of a lovely language." The True BASIC they promote is a structured language, close to the ANSI Standard BASIC that is nearing formal approval (The American National Standards Institute moves with glacial slowness when it does computer languages, because it tries to get everything right, but the technology refuses to stand still).

To users accustomed to "Street BASIC," the language that Kemeny and Kurtz describe is strangely familiar, but vastly altered. In True BASIC, line numbers are optional. Exits from the middle of a loop are permitted. Subroutines can be extensively developed and can even be "recursive" (a subroutine can "call" itself—something

REVIEWS

BOOKS

that is illegal in more primitive computer languages). Spacing and indenting can be used to make programs more readable (this is impossible in "Street BASIC"). The GO TO statement, hated by all computer scientists as a source of confusion and a crutch to sloppy programming, will still be permitted. Color graphics will be fully supported within BASIC as an option, along with real-time clocks and lots of other neat features.

Kemeny and Kurtz support their arguments with a variety of tiny gem-like BASIC programs (many of which work fine on my local version of Street BASIC). An eight-line program that computes the value of pi to an extreme accuracy is my favorite. Another draws a geometrically perfect American flag, and a third uses a sophisticated sorting algorithm to order long lists of numbers by size. The reader quickly realizes that this is the work of brilliant, inspired teachers.

Future computer historians will be grateful that Kemeny and Kurtz have set down their personal reminiscences of the origins of BASIC. Critics of the language will find that the authors agree with most of the charges that have been leveled against Street BASIC. When versions of True BASIC become available for popular home computers, we will be able to judge for ourselves.

At \$12.95 for a slim paperback, *Back To BASIC* may seem a bit overpriced, but in academic publishing this is not unusual. The book is well printed on good-quality paper, with a real index. The same publisher is also bringing out *The True BASIC Reference Manual* (Addison-Wesley, 1985).

GAME SOFTWARE

The Incredible Laboratory

Published by: Sunburst Communications, Inc.
For: Atari, Apple, and Commodore with 48K and disk drive

Reviewed by: Doug Pencille

Does your kid want to be a scientist when he grows up? Would you rather spend the money on an educational program instead of a box of chemicals? Give *The Incredible Laboratory* a try, and save the chemicals for later.

The program is more of a game than a strict learning process, and will offer hours of fun for both kids and adults. By selecting various ingredients from the list provided on the screen the user builds a unique monster. When the ingredients are changed, different parts of the monster are also. There are three levels of play (novice, apprentice and scientist) with "challenge" and "play" modes for each. The play mode displays a list of chemicals and a boiling beaker. The chemicals are selected and the beaker changes colors. When the process is finished, the chemicals vaporize and a monster appears. In the challenge mode you have an opponent, and upon completion three monsters appear. Each player then selects the monster they think they created; one will be an imposter.

The Incredible Laboratory helps kids to practice their skill-based problem solving methods and to analyze situations, gather information, identify patterns and focus on the parts of a problem rather than the whole. The recommended age for play is 11 years to adult; however, my child of 6 years has spent countless hours discovering ways to create a new monster. Then again, he does want to be a scientist.

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MICROTIMES CLASSIFIEDS

WORK!

USER GROUP NETWORK

By Mary Eisenhart

Hot topic at Bay Area user group meetings this month: **Arf, Arf** a character at some dubious stage of evolution whose latest project is putting some enticing-looking program on various bulletin boards. When the luckless user downloads the program (which has been appearing in assorted guises on CompuServe and local boards), it erases all the data stored on the disk and displays a message to the effect of "Arf, arf, I gotcha." Sysops are strongly recommending that you download programs onto a blank diskette (or one filled with stuff you don't care about) and check them out before adding them to your collection. One unfortunate is said to have lost the entire contents of his hard disk to Arf, Arf.

On a more cheerful note, last month we had the pleasure of a surprise visit from **Maria Luisa Fagian** and **Stefano Minotto** of Padua, Italy. Stefano's the president of Padua's Apple user group, the **Golden Apple Club**, and the duo was over here on assignment to check out the US Apple scene for an Italian computer magazine. User group meetings being high on their agenda, we went off to the weekly gathering of **BMUG** (the **Berkeley Macintosh User Group**), where president **Reese Jones** was expounding on the fine points of setting up the perfect system on your Mac and debate was raging on whether the **Amiga** was the Next Big Thing or the Turkey Of The Year.

Stefano says there's a dire shortage of public domain software among European user groups generally, and the Golden Applers would be very interested in corresponding with US groups to exchange information and software. Apple/Mac enthusiasts (groups or individuals) interested in acquiring foreign contacts are invited to write to Stefano Minotto, Golden Apple Club, Riviera Tiso da Camposanpiero, 26, — 35100 Padua, Italy.

The July meeting of the **San Francisco Commodore Users Group** attracted an SRO crowd — not only was the fabled Amiga putting in an appearance, but the folks from Oakland's **A-Squared Systems** were showing off their **Amiga Eye**. Members watched with chagrin and glee as their digitized images cavorted across the screen and were frozen, edited, superimposed and otherwise manipulated. (For more on the Amiga Eye, see the Commodore column this issue by **Matthew Leeds**, who was presiding over the gathering in the absence of ailing SFCUG president **Roger Tierce**.)

"You don't have to predict the future, you just have to make the future," exhorted **Lee Felsenstein** at the August meeting of the hallowed **Homebrew Computer Club**. All this was by way of presenting the Hackintosh Project (the erstwhile Hacker's Mac), the aim of which is to produce an open-architecture, completely reverse-engineerable Mac-type machine. The project has been subdivided into Hardware, Software, and System sub-groups, and input is cordially invited. The Hackintosh project continues as part of the **Hackers Conference on The WELL**, which can be reached at (415) 332-6106 (modem) or (415) 332-4334 (voice, for general information).

Word comes from **Ron Bastone** of Hollywood that the **Mac-Hollywood** chapter of the **Los Angeles Macintosh Group** has seceded and renamed itself a **LA Mac**. Bastone says that the move was made to allow for smaller, more manageable meetings and to facilitate participation and networking. a **LA Mac** will hold three monthly meetings at various LA locations in addition to quarterly large-scale meetings. For more info contact Ron at (213) 462-2860 or write a **LA Mac**, P.O. Box 27429, Los Angeles, CA 90027.

HUG, the **Hollywood User Group** for **Commodore** computers, has changed its monthly meeting address. Meetings are now on the second Saturday of the month at Plummer Park, Conference Room, 7377 Santa Monica Blvd., three blocks west of La Brea. For more information, write HUG, P.O. Box 38313, Hollywood, CA 90038 or call (213) 463-8973 (voice) or (213) 874-8256 (modem).

Orange County user groups take note: **Our Hero**, a sandwich shop in Anaheim, is offering its facilities as a meeting place for interested groups. As an added inducement, the enterprising **James**, who runs the place, is offering a third hero sandwich free to those who buy two. Our Hero is open from 10–8 every day, and located at 1711 W. Ball Road. If the prospect of meeting and munching sounds good to your group, give James a call at (714) 533-3030.

Through channels best described as circuitous comes a letter from **Klaus and Gretchen Bender** of Gettysburg, PA regarding their BBS, **The Dead Board**. The title refers not to the board's deceased state but to its purpose, namely information exchange, tape trading and general networking among Grateful Dead enthusiasts. The parameters of this board are 8 bit word, 1 stop bit, no parity and 300 baud. The Dead Board operates 24 hours a day and can be accessed at (717) 334-8680. (If any California Deadheads are operating boards, please avail yourselves of the coupon in this issue to send us your FREE listing. This offer also applies to Springsteen fans, Beethoven aficionados, Wagnerites, Duranies, and anybody else who wants a BBS, musical or otherwise, publicized.)

SoCal **Apple** users will probably want to know that **AppleFest '85** will be held September 13–15 at the Long Beach Convention and Entertainment Center. This is a comprehensive trade show featuring Apple II and Macintosh products, software and third-party hardware, as well as seminars and hands-on training sessions. Business, education and home applications will all be in evidence. For information on AppleFest contact **Marcia Hanscome** at (213) 434-6806 and (213) 556-4410.

MicroTimes will be at various shows and conventions this month, so be sure to stop by, say hello and let us know what you'd like to see in the magazine. We'll be at AppleFest in Long Beach and the Byte show in San Francisco September 27–29.

And, until we meet again next month, address all relevant correspondence to **MicroTimes User Group Network**, 5951 Canning St., Oakland, CA 94609. □

BULLETIN BOARDS

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Gamenet Bulletin Board System. BBS is devoted 100% to gaming subjects. 24 hours, 20 boards, 10 D&D/RPG boards, Alkahest, professional book reviews. Unending Story, Adventurers' Training Ground, Game Hint, etc. Sysop: L.J. Phone: (213) 541-8039.

The Consultant's Exchange BBS Serving professional computer consultants and students since 1983 with the finest public domain software for the IBM-PC. Featuring consultants list and job list. (714) 842-6348 24 hours.

Thousand Oaks Technical (805) 493-1495. This massive 64 megabyte board has a mind-boggling number of downloadable programs. The board has no bulletin board feature and allows unlimited upload time. Download time is limited depending on upload exchange.

BULLETIN BOARDS

Granada Engineering Group RCP/M (818) 360-5053. Technical information, BBS lists, and help on CP/M assembly language program writing.

Aware II (213) 851-0780. Sports BBS with different discussion boards centered around USFL, baseball, etc.

Junkyard Data (213) 867-9541. Multi-interest board in Norwalk with everything from jokes and for sale items to reviews (movies & software), trivia questions, an adults only section, etc.

Marina Matchup (213) 397-6300. This Mar Vista-based dating board operates with Martian software.

Lynze's Motherboard North Hollywood; multi-interest board with public boards, entertainers exchange, job exchange info. Runs on IBM-PC with 10 mb storage, operates on Martian Software, runs 24 hours a day. (818) 508-6482.

Calendar Of Events

September 11 Open house, Northeastern University, 5 – 8 pm, 2620 Augustine St., Suite 170, Santa Clara. Classes in professional development for those in technical fields; session begins September 23.

September 13 – 15 AppleFest '85, Long Beach Convention and Entertainment Center. (213) 434-6806 for information.

September 14 Computer Swap, Santa Clara County Fairgrounds, San Jose. (415) 366-9162 for info.

September 16 – 22 dBase III programming classes, taught by Bill Amatneek, evening and weekend sessions at Mill Valley Howard Johnson's. Phone (415) 388-8024.

September 19 "An Introduction to Microcomputers Using the IBM Personal Computer," and other courses including beginning BASIC, LISP, and PASCAL, with advanced class in Assembly Language, San Francisco State University Extension, (415) 469-1373.

September 20 – 21 FORTH Interest Group Convention, Rickey's Hyatt House, Palo Alto. (408) 277-0668.

September 27 – 29 BYTE Computer Show, Brooks Hall, San Francisco. (617) 449-6600 for information.

September 28 – 29 Golden Gate Computer Expo, Oakland Coliseum, 10 am – 5 pm. (415) 459-1998.

October 5 "Welcome to Computer Graphics," introductory seminar at Computer Arts Institute, San Anselmo. Registration deadline September 23, fee \$25. (415) 459-3852 for information many other courses available.

October 5 Computer Swap, LA County Fairgrounds, Pomona. (408) 266-6768, (408) 978-SWAP for info.

October 18 – 20 Santa Rosa Computer Festival, Technology for Business and Education, Luther Burbank Center, Santa Rosa. Free seminars. Contact Michael Judah, (707) 545-1414 or Ron Person, (707) 579-2603.

BULLETIN BOARDS

Bulletin Board System. BBS devoted to handicappers and racing fans in So. Cal. On line every weekend. Log-on: race data for Santa Anita, Hollywood Park and Del Mar. (213) 934-6026.

Videodrome BBS. Where computers and video meet. (213) 324-5882. Open weekdays 4 pm - 2 am, weekends 12 pm - 2 am. A Commodore 64 system.

HUG1. The official BBS of the Hollywood Commodore User Group (HUG). All HUG members and visitors are welcome to drop by. (213) 874-8256.

The Agency BBS. 300 baud. Free. All systems welcome. 16 message bases large data base of over 100 files on various subjects. Special areas for special interests such as gaming, business programs, and MIDI (Musical Instrument Digital Interface). 24 hours. (818) 794-5001.

ASSOCIATIONS

Computer Professionals for Social Responsibility. The LA chapter is interested in computer reliability and preventing nuclear war, the socially useful direction of computer research, and similar topics. They meet the third Monday at 7:30 pm at the Nuclear Information Center, 1431 Ocean Ave., Suite B, Santa Monica. Phone (213) 747-3219 for more information.

Organization of Professionals, Educators, and Novices (OPEN). Tutorials, random access period, feature presentation, public domain library, and CP/M literature are all part of the monthly meetings of Osborne owners/users and MS-DOS transportables. Club BBS and newsletter. Call Frank L. Christ at (213) 498-4186 for more information. Meetings at Learning Assistance Center, CSU Long Beach, 3rd Wednesdays, 7 pm.

USER GROUP NETWORK

ASSOCIATIONS

The North Orange County Computer Club This group is the largest and perhaps the oldest in the county. It is affiliated with a large number of special interest groups and offers something for just about every user. General meetings are usually the first Sunday of every month in the Hashinger Auditorium, Chapman College, Orange. For info, call (714) 998-8080.

The South Orange County Computer Club A general computer club that meets the first Tuesday of every month at 3545 Harbor Blvd., Costa Mesa. Meetings begin at 7:00 P.M.

BULLETIN BOARDS NATIONAL

The Dead Board (717) 334-8680, 24 hrs., 8 bit word, 1 stop bit, no parity, 300 baud. Grateful Dead tape trading and info; space for bulletins, ads and public mail.

NATIONAL/INTERNATIONAL

Network Users Association. 2111 Eisenhower Ave., Suite 400, Alexandria, VA 22314. (800) 638-8510 or (703) 683-8500.

TPUG World's largest Commodore Users Group. \$25 annual membership entitles you to access to library of public domain software for C-64, VIC 20, PET, CBM, SuperPET, B-128. Coming soon — Plus 4, C-16, C-128. New disks added each month. Also TPUG Magazine (10 per year), free access to TPUG's Bulletin Board Modem System, 24 hours, 7 days. TPUG Inc., 1912A Avenue Rd., Suite 1, Toronto, Canada M5M4A1.

Apple Co-op 290 SW 43rd, Renton, WA 98055. (201) 251-5222.

JUG (Jefferson State Computer Users Group). Many SIGs, newsletter. Dues \$5.00 year, some SIGs additional. Contact JUG, P.O. Box 457, Gold Hill, OR 97525-0457.

MicroPro Users Group of America. National group with over 200 members worldwide. Dedicated to supporting MicroPro products, especially WordStar and InfoStar, for any hardware. c/o Procyon Associates, 140 Riverside Drive, New York, NY 10024. (212) 595-4811.

Franklin Users Group International. Supporting users of II, II+, Franklins, and all compatibles. We support all members with a monthly newsletter, "The Clone Ace," a growing public domain library and personal attention. Membership \$15.00 a year. Contact Douglas M. Trueman, EastWind Apt. L77, Tecumseh, MO 65760.

68796 Hackers. 68796 (68000 + IEEE-796) is the only users group supporting hobbyists constructing WICAT 150/Mini-system, Multibus, and 16/32 bit systems. In addition to the 68796 Hacker's Newsletter, we are putting together a disk library. Dues \$20/year. Contact Victor R. Frank, 12450 Skyline Blvd., Woodside, CA 94062. (415) 851-7031.

Golden Apple Club, Apple II and Macintosh. Contact Stefano Minotto, Golden Apple Club, Riviera Tiso da Campansapiero, 26, — 35100 Padua, Italy.

ADAM

Adam Users of Southern California. Come and keep the ADAM going. We have access to some of the people who developed software for ADAM and we are going to

ADAM

create a base for tips, reviews, and a BBS. Get on line with ADAM. Meetings at Airport College Center, Sepulveda and Century, 4th Sunday, noon. Contact Harvey Klein, 1736 S. Bedford, LA, (213) 553-1062 or Paul Shecter, 5545 Lindley, Tarzana.

ALTOS

Altos User group forming in West LA area. Contact Margaret Beemer, History Department, UCLA, Los Angeles, CA 90024.

APPLE

The Orange Apple Group All Apple owners are invited. Members are knowledgeable on many usages of all types of Apple machines. Meetings are on the first Saturday of every month from 9:00 to 12:00 a.m. For info, call (714) 897-8943.

South Bay Apple III User Group Over 85 Apple III users share information, programs, group purchases, product demos. Special interest groups meet 1st Tuesdays. General meetings on 11th Tuesdays at 7:30 p.m., UCLA Harbor General Hospital, Room III. Corner of Vermont and Carson, off 110 Fwy. Contact Gary Fortune, P.O. Box 432, Redondo Beach, CA 90277, (213) 316-7738.

Pasadena Apple Users Group (PAUG) Meets at Century Federal Savings, 199 North Lake Avenue, Pasadena, CA (corner of Lake and Walnut). Enter from the parking lot side. Take the elevator to the basement. The bank unlocks the doors at about 7:15 pm and the meeting starts at 7:30. No dues, new members welcome.

Wabash Apple Users Group Product demos of software and peripherals, discussions, help from experts. Public domain library. Meets twice a month at the Burbank Public Library, 110 N. Glenoaks Blvd., Burbank. Some months there are no meetings, so call Marie Kaden for information: (818) 846-6682.

AT&T

AT&T 6300 West LA: AT&T 6300 or 8086 compatible (desk pro) group forming. Contact Miles Hillis, (213) 472-3522, leave name and interest.

ATARI

Atari Computer Association of Orange County (ACAOC). Join one of the biggest Atari user groups in Southern California. Monthly magazine, large public domain library, and BBS privileges for members. Dues \$24.00/yr., \$18.00 for non-attending out-of-town members. Meetings at Golden West College, Room 123, Huntington Beach, CA 92647, 4th Sunday of each month, 1-5 pm. BBS: (714) 731-6523.

West LA Atari Users Group. Come join fellow Atarians! Dues are \$20.00/year. Newsletter, P/D library, ATR-Sig, discounts, guest speakers. Please call for directions to meeting room! If you're reading this, you belong with us. Meetings first Wednesday of the month, 7 pm, Paul Revere Jr. H.S., 1450 Allenford Dr., Brentwood. Call John Scheid, pres., for more information (213) 829-7239.

Los Angeles Atari Computer Enthusiasts (LAACE) meets 2nd Mon./mo. at 7:00 pm at Granada Hills High School, 10535 Zelzah Ave., Granada Hills, CA. Contact Bob Keimach, (818) 368-6243.

COMMODORE

Club 64 National user group. Monthly newsletter, BBS, group purchasing, public domain software, much more. Contact: Robert Johnson, (213) 925-4049.

San Diego Commodore Users Group Meets third Tuesday, 7-10 pm, at VFW Bldg., 19th and Broadway, San Diego. Contact Jane Campbell, (619) 277-7214 (between 5 and 9 pm) for more information, or write: P.O. Box 86531, San Diego, CA 92138-6531.

San Fernando Valley Commodore Users Group Meets second Wednesday of the month at Patrick Henry Junior High on Louise Ave. between Devonshire and San Jose in Granada Hills, near 118/405 freeway interchange. Contact Tom Lynch, 21208 Nashville, Chatsworth, CA 91311, (818) 709-4736.

San Luis Obispo Commodore Computer Club 1766 9th St., Los Osos, CA 93402. (805) 528-7475 BBS.

The Commodore Users Group - San Juan Capistrano This group of C64 users meets the second Saturday of every month from 9:00 am till 12:00 at Great American Federal Savings and Loan, 32232 Camino Capri, San Juan Capistrano. For info call 496-5745.

Orange County Commodore Technical User's Group C-TUG. Orange County's Commodore user group. Club newsletter, two 300/1200 baud BBSs, door prizes, SIGs in Comal, DOS protection, data bases, wpros, and BASIC. Custom software and ROM chips, and just plain good times. Meetings at Mercury Savings and Loan, 1095 Irvine Blvd., Tustin, CA 92680, fourth Sunday of the month, 11 am. Contact Tony Soto, P.O. Box 1497, Costa Mesa, CA 92628, (714) 953-0598.

C-TUG South Orange County. Classes on BASIC, M/L & Assembly; large public domain library, club newsletters. 300/1200 Baud Printer BBS. (714) 458-1258, El Toro. Meetings 2nd Saturday of the month, Mercury Savings, 23021 Lake Center Drive, El Toro, 2-6 pm.

Hollywood User Group (HUG) for Commodore 64. For further info write HUG, P.O. Box 38313, Hollywood, CA 90038; or call (213) 463-8973 (voice) or the HUG 1 BBS (213) 874-8253 24 hours a day.

Southern California 64 Users Group. Learn more about your Commodore 64. Extensive public domain disk library. Meet at Mid Cities Bank in Gemco shopping center on Bellflower, just south of 91 Freeway, 7 pm, 3rd Tuesday of every month. Contact Joe Al-lain, 3852 Riverton, Studio City, CA 91604, (818) 985-2647.

EPSON

Cursor Club — Epson 402 W. Arrow Highway, Suite 6, San Dimas, CA 91773. (714) 559-8361, Bulletin Board: (714) 592-6316.

Foothill Epson User Group. We meet the fourth Tuesday of every month at Sparr Heights Community Bldg., 3311 Downing St., Glendale, CA, 7:30-9:30 pm. All are invited, speakers, questions, products, public domain disks, etc. Contact Gerald Jamriska, 2960 Hawkridge, La Crescenta, CA 91214, (818) 248-7133 for more info.

Epson Users Group of Orange County 6075 Jeffrey Mark Street, Cypress, CA 90630, (213) 414-4817.

Epson Users of San Diego P.O. Box 87448, San Diego, CA 92138, (619) 560-7604.

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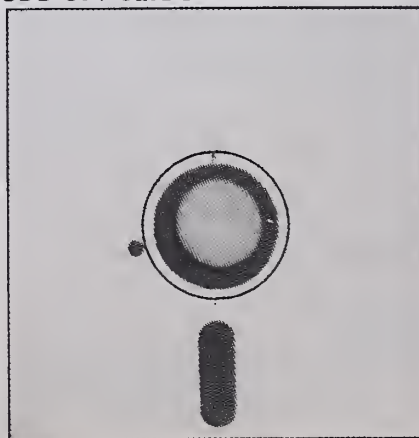
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Contact name _____

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Mail to: **MicroTimes User Group Listings**

1800 N. Highland #220
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5951 Canning Street
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USER GROUP NETWORK

EPSON

High Desert Epson Users Group 933 Cottonwood Drive, Barstow, CA 92311, (619) 256-3541.

PSC/QX 2934 Wilshire Blvd., Santa Monica, CA 90403, (213) 453-4535, Bulletin Board: (213) 474-4952.

South Bay Epson Users Group 1115 Cerise Avenue, Torrance, CA 90503, (213) 328-9916, Bulletin Board: (213) 618-1940.

Epson Computer Club of America. Monthly meeting 2nd Saturday of the month at 10 am, Mercury Savings and Loan, Irvine Blvd. one block east of Newport Ave. Messages Epson West Bulletin Board (714) 630-7104 User area B:15. Monthly newsletter "The Help Key." Contact Roy Boorman, 4021 Winterhaven St., Yorba Linda CA 92686, (714) 524-9483.

San Fernando Valley Epson User Group. TUG-NET SIG, monthly newsletter, BBS, group purchase, public software, classes. Meetings at Western Federal Savings, 14600 Roscoe, Van Nuys, 3rd Wednesday, 7 pm. Contact Tom Keyser, P.O. Box 1524, Reseda 91335, (818) 705-6300.

FORTH

FORTH Interest Group, Los Angeles Chapter. Meets 4th Saturday, 10 am, Hawthorne Public Library, 12700 S. Grevillea, Hawthorne. Contact Phil Wasson (213) 649-1428.

FORTH Interest Group, Orange County Chapter. Meets 1st and 4th Wednesdays, 7 pm. Call Noshir Jesung for info. (714) 842-3032.

FORTH Interest Group, San Diego Chapter. Meets weekly, Thurs., 12 noon, contact Guy Kelly (619) 268-3100 ext. 4784.

FUJITSU

Want User's Group Info Have Fujitsu Micro 16, am looking for a user's group or BBS. Contact Greg Lucido, 5199 E. Pacific Coast Highway, Long Beach, CA 90804.

HEWLETT-PACKARD

Club of Hewlett-Packard Hand-Held Users (CHHU). HP handheld users worldwide support CHHU as a noncommercial, open, independent club dedicated to applying today's machines and making a contribution to the true personal computer of tomorrow. Send SASE for more info to Richard J. Nelson, 2545 W. Camden Place, Santa Ana, CA 92704, or call (714) 754-7757 for meeting directions.

IBM

The North Orange County IBM PC Users Group These people are interested in helping any PC users. They meet the second Tuesday of each month at the Sunny Hills Racquet Club in Fullerton at 7:30.

Osborne Komputer Owners Klub (OKOK) meets 2nd Tues./mo. at 6:30 pm on the Cal-Tech campus in the Winnette Lounge Building on San Pasqual Street in Pasadena. Contact Lionel Sorraço, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

IBM

Osborne National Users Group meets 2nd Fri./mo. at 7:30 pm at Wizard of Oz, 20630 Lassen St., Chatsworth, CA 91311. Contact Art Schlestein, (818) 709-6969.

The Greater South Bay IBM PC Users Association Any L.A. area PC or compatible owners are welcome to attend these meetings at the TRW cafeteria on Compton Blvd. Meeting time is 7:00 pm on the third Thursday of each month. For info call (213) 519-9365.

The Claremont Computer Club This club is for any interested IBM PC users. Meeting starts at 7:30 on the third Monday at the Galileo Edwards Bldg. on the Harvey Mudd Campus. For info call (714) 626-2286.

Technical Users Group (TUG-NET). For CP/M & MS-DOS PC users. Meets on the first Monday of each month at 7:00 pm. Valley Plaza Park, Community Room, 12240 Archwood St., North Hollywood, CA. Contact Mike Faith - (818) 994-6567.

UCLA PC Users Group. IBM/PC or compatible owners welcome to join us on 2nd Tuesday, 7 pm. Public domain library, SIGs, and newsletter. NPI Auditorium, UCLA, Westwood Plaza, Level C. Contact Anne Sylvester, 601 Ninth St., Santa Monica, CA 90402, (213) 451-5390.

LEADING EDGE

Leading Edge User's Group. A user's group of predominantly Leading Edge users and other similar machines with high clock speed. Public domain software, demos of software/hardware. No fees. Meetings 7:00 pm, 2nd Wednesday of the month, 12792 Valley View, Suite F, Garden Grove, Contact Dana Nutter or Bruce Fruchter, (714) 891-2001 for information.

LISA

The Lisa Club of Los Angeles This is a brand new club just forming for Lisa owners. Meetings are scheduled to be the first Monday of each month. They have no permanent meeting place as of yet, but for information call (213) 852-4994.

MACINTOSH

Los Angeles Macintosh Group (LAMB) Membership fee is \$25/yr or \$15/yr for students. Membership includes 12 issues of MACDIGEST newsletter, access to public domain library, BBS, discounts at local stores. Meetings at Madison Elementary School, 11th and Arizona Ave., Santa Monica, 2nd Thursday of the month. Contact J. Baram, (213) 392-5697 for information.

a LA MAC. A networking and information organization for Macintosh users. Regional meetings three times monthly in varying locations in LA area. Contact Ron Bastone, P.O. Box 27429, Los Angeles, CA 90027. (213) 462-2860.

Ventura County Macintosh Club Mac and Lisa users invited. Membership \$21/yr.; newsletter, software library, discussions and ideas. P.O. Box 7754, Oxnard, CA 93031, (805) 983-1610, (805) 499-2824.

NEC

Orange County NEC Users Group (OCNUG) Dedicated to NEC-APC computers, CP/M-86 & MS-DOS. Always room for any experience level. Meets 3 pm, third Saturday of the month. 6642 Lenore, Garden Grove. CA 92645. Call John Bingel at (714) 897-7656 for more info.

OSBORNE

Osborne National Users Group. Anyone interested in CP/M computer systems is welcome. Free admission. Speakers, questions and answers. Join our group for \$10.00 yr. and copy public domain software from library. Meetings at 20630 Lassen St., Chatsworth, 2nd Friday of the month, 7:00 pm. Contact Alicia Fahey, P.O. Box 424, Northridge, CA 91328, or call (818) 709-6202 for more info.

RADIO SHACK/TRS

South Bay Color Computer Club TRS-80, TDP-100, Dragon. Meets third Friday of the month at Mercury Savings, 22939 Hawthorne Blvd., Torrance. Info: Andrew Corlett, 1435 W. 172nd St., Gardena, CA 90247. (213) 538-8394.

The Orange County TRS-80 Group This club is for all TRS users from beginning to expert. Meetings take place the third Sunday of every month at Chapman College, 1:30 pm. For info call 638-7889 after 7:00 pm.

SANYO

Sanyo-MS/DOS Table Top Computers, 14717 South Prairie Ave., Lawndale, CA 90260. (213) 679-1151.

TEXAS INSTRUMENTS

LA 99er Computer Club TI 99/4A support, classes and SIGs, large software library, monthly newsletter. Demonstrations, bulk purchase discounts on hardware, software and books. A good group to join. Meetings at Torrance Public Library, 3031 Torrance Blvd., Torrance, CA. 4th Wednesday of the month, 7 pm. Contact Terrie Masters, 148 S. Maple Drive, Beverly Hills, CA 90212, (213) 271-6930.

The TI-99 Club Yes, there still are a lot of 99's and 99/4a's around. If you own one, then get in touch with these people. They have good info for TI owners. Meetings take place at the Westminster Community Center on the third Thursday of every month at 7:00 pm. For info, call (714) 842-0859.

West Side TI Texas Instruments support group forming, users only, to map, trade, barter and exchange ideas, knowledge, and PD software. Meetings 3rd Tuesday of the month. Contact Fred L. Russo for information: 2021 Ocean Ave. #126, Santa Monica, CA 90405, (213) 392-3217.

San Gabriel Valley TI 99/4 Users Group meets 1st Wed./mo. at 6:30 pm in the Covina Parkway, West Covina, CA. Contact Tom Padilla, (213) 330-8240.

TOMY

Tomy Tutor computer user group. Contact Eugene C. Dinovo, P.O. Box 37, Sepulveda, CA 91343.

WANG

Wang WP Users Group. Meets 4th Thurs. of month, 6 pm. Monthly newsletter, speakers, questions, information network, products. Call for meeting place: Cindy Randall, (818) 980-6622.

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MicroTimes offers free listings for user groups, professional associations, bulletin boards and networks. Send your information to *MicroTimes* User Group Network, 5951 Canning St., Oakland, CA 94609, or use the form in this issue.

Product Announcements

By Michael Wiesenberg

For The Rest Of Us?

Lisa Computers have (has?) finally released their long awaited 256-bit **Apple III Portable Computer**. Lisa spokesman Franklin Ace announced to the press that the new machine skipped 16, 32, 64, and 128 bits (all other intermediate bit configurations have been patented by DEC) to try to get a jump on the competition. Marketing manager Mac MacIntosh remarked, "The III was never a big secret to those who knew where to look. Our 1952 Corporate Report had a picture of it in a microdot over the first i of 'Lisa Deuxième' on page 7932."

The Apple III has 83 built-in 0.3-inch LED disk drives, expandable with an optional expansion option to 84, 64 googol-bytes of main memory, contractable with optional contraction board to 64 giggles, 232 RS-232 ports, 800 Y-triple-A ports, a built-in 22-foot (diagonal) 3D screen (using saddle-screen technology) with 0.00001 ns refresh rate, 12 joysticks, one joyspot, built-in modem with autodial, autoanswer, autoharp, and autohangup, menu-driven laboratory rat with detachable tail to point to pictures on the display of desired operations and operating desires, and 913-key keyboard plus numeric pad and 65536 programmable function keys. For the special introductory price of \$2 (Californians, add 13c sales tax) plus \$2000 p. and h., you get all the hardware, VisiClack, OmniClone, CP/M-257™, tm™, 1000 arcade games (including 900 different versions of *Flight Simulator*), UNIX, ONYX, VENIX, XENIX, PHOENIX, QUNIX, CROMIX, HP-UX, PC-DOS, RET-A, JCL, an asynchronous terminal emulator, RPG, FORTRAN 66, 77, and 88, ANTSY COBOL, FORTH, PILOT, C, D, E, BEB, APL, PL/I, PL/M, SNOBOL, LITHP, ADA, LOGO, CBASIC, ZBASIC, Integer BASIC, LisaSoft, SoftLisa, Pascal, Mesa, Modula-2, WirthLes, and SmallTalk, and a complete one-page manual explaining how to use everything. Aimed at the high end of the low-end middle-business vertical/horizontal market, the Apple III uses low technology (it has less than one integrated circuit, as opposed to the 31 of the 'Lisa Deuxième' and the 110 of its predecessor, the Lisa II Minus) to attract the broad spectrum of users, from cheap hobbyists to cheap businessmen. **Reader Service No. 10¹⁰10**.

Get GUMMed

The **Gurus of UNIX Meeting of Minds (GUMM)** takes place Wednesday, April 1, 2076 (check that in your perpetual calendar program), 14 feet above the ground directly in front of the Milpitas Gumps. Members will grep each other by the hand (after intro), smoke filtered chroots in pipes, chown with forks, use the wc (unless u-clean), fseek nice zombie processes, strip, and sleep, but not, we hope, od. Three days will be devoted to discussion of the ramifications of whodo. Two seconds have been allotted for a complete rundown of all the user-friendly features of UNIX. Seminars include "Everything

You Know Is Wrong," led by Tom Kempson, "Batman or Cat:MAN?" led by Richie Dennis, "cc C? Si! Si!" led by Kerwin Bernighan, and "Document UNIX? Are You Kidding?" led by Jan Yeats. No Reader Service No. is necessary because all GUGUs (Gurus of UNIX Group of Users) know everything, including what every other member is thinking and all information about where the meeting takes place.

Isn't That the Stuff Carol Doda Used?

Silicon! by Irwin Irving, published by Plastic Fantastic Press of Berkeley, is a potboiler about sex, sin, sybaritism, synthetic sadomasochism, sensuality, and waveform soldering in the sexy, sinful, sybaritic, sensual firms of Silicon Valley, by the author of *Formfeed!*, *Cars!*, *Tires*, and *Dr. Dobb: The Legend Relived*. Hardbound, \$2; paperback, \$19.95; disk, \$29.95 (includes one-year update service, unless you're already dated up). Add \$1.75 for right justification and another \$2 for proportional spacing. (Disk not available in California due to air quality restrictions.) **Reader Service No. +1**.

Nuke 'Em Pewter

Pewter 'Puter from COMPuters is a quintuple-processor (Z8, 6502, Z80C, 8089, HP9000) multitasking, multipartitioned, multiuser, multifarious bubble-memory-oriented hard-disk-based applications workstation with bank-selected user-prioritized read/write inaccessible on/off-line internal/external memories configurable from 237K to 3.14159650Gb, one byte of ROM (1 bit for raster-scan display refresh), 137 input/output ports (10 each of RS-232A, B, and C, 13.5 IEEE, each ranging from 1 to 38,4000 bps), and the rest random access with bisync/async communications protocol and gloveless handshaking), incorporated 12-foot (diagonal measure) amber on sapphire display (with optional RGB or digital bit-mapped color holographic adapters), built-in autodial/autoanswer last-number-dialed-but-one modem, speech and music synthesizer with 88-octave 100,000 dB range (1000 RMS watters per channel, four channels drive, with 0.08% total harmonic distortion), semidetachable ergonomic plateau-contoured keyboard, autoboot ROMs with integrated self-test circuitry, 24 integrated in/on-line soggy-disk-drives, 23.7 Winchester-Cathedral drives, 12 driveways, 18 virtual drives, 19 semivirtual drives, 13 simulated drives, and 12 simulated virtual drives, each with logic-seeking heads and head-seeking logic, integrated color-coordinated pewter dust cover (thus their name), built-in 12,000-page-per-minute, 1200-column laser printer, applications installed in ROMs or user-programmable EPROMs, 3.5-by-1.3-inch wire-wrap area for breadboarding, S-100 expansion, local-area networking, integrated 97-pen plotter with micro-grip drive system and rotating "grit wheels" to force grit particles to penetrate the

drawing medium at thousands of points causing microscopic indentations undetectable to the naked eye, fail-safe power surge protection circuitry, PROM programmer, hardwired hex file downloader, internal connectors for any other computer system or electric appliance (except IBM products), open-ended warranty, no software included or presently available, 13 self-destruct circuits (including one that the designers cannot find and cannot safely dismantle the equipment to look for), streamlined styling for ease of trajectory plotting, and 13 nuclear warheads, each capable of destroying the known universe. For only \$18,000,000,000,000 (plus \$2.50 p. and h.; Californians add \$108,000,000,000 tax) you can swing the balance of power in your favor! (Manual only, 77c.) **Reader Service No. 3.141592650**.

Hot Item

Your Apple run too hot? MT System Zinc announces the **UH1**, their Universal Heatsink 1. Not only does this dandy little item fit any power supply, it also doubles as a hand warmer and energy sink. \$1.99 postpaid, while they last, \$2.99 for the deluxe UH2, and \$3.99 for the super deluxe UH3. Ready? **UH1, UH2, UH3. Reader Service No. 2001**.

Oh, Foo!

The expressions FOOBAR and SNAFU originated with the military in World War II. The latter means, "Situation Normal, All F***ed Up," and the former, "F***ed Up Beyond All Repair." Somehow programmers added FOOBAR to their parlance, and always use FOO for any unspecified variable name, and BAR if they need another name. Technical writers who do not like the undignified sounds of these terms have banded together in TSOTSTDUBPIMOTT, **The Society of Those Sworn to Destroy Use by Programmers in Manuals of the Term FOO**. TSOTSTDUBPIMOTT meets yearly in the Technical Publications Auditorium at Hewlett-Packard's Data Systems Division.

IBM Recalls Everything (Except IBM)

IBM (Incredibly Big Manufacturer) has announced, through its wholly-owned subsidiary, the United States Government, a recall of all privately held personal computers, citing a defective connector that could disintegrate during normal operation, releasing deadly dimethyl-triptamine gas. (Extra bonuses will be paid those turning in IBM PC plug-compatible look-alikes.) Recalled computers will be replaced at no cost with IBM PCs that have been modified to accept only IBM software. (All so-called compatible software will self-destruct in these special machines.) In other news, IBM is rumored to be planning a midyear fourfold increase in the prices of all PC software. **Reader Service No. 0**.

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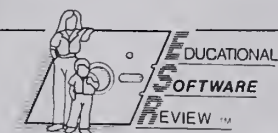
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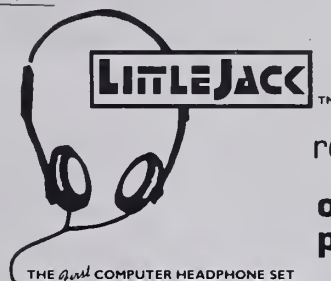
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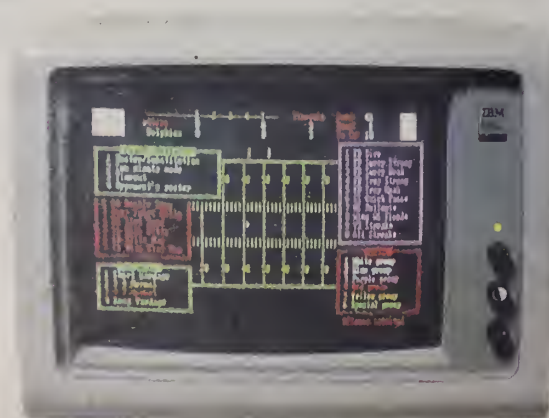
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